MONTHLY WEATHER REVIEW.

Editor: Prof. CLEVELAND ABBE.

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INTRODUCTION.

The REVIEW for May, 1895, is based on reports from 3,315 stations occupied by regular and voluntary observers. These reports are classified as follows: 148 reports from Weather Bureau stations; 35 reports from U. S. Army post surgeons; 2,794 monthly reports from State Weather Service and voluntary observers; 30 reports from Canadian stations; 96 reports through the Southern Pacific Railway Company; 521 marine reports through the cooperation of the Hydrographic Office, Navy Department, and New York Herald Weather Service; weekly or monthly reports from 30 U. S. Life-Saving stations; monthly reports from local services established in all States and Territories; and international simultaneous observations. Trustworthy newspaper extracts and special reports have also been used.

The WEATHER REVIEW is prepared under the general editorial supervision of Prof. Cleveland Abbe. Unless otherwise specifically noted, the text is written by the Editor, but the statistical tables are furnished by the Division of Records and Meteorological Data, in charge of Mr. A. J. Henry, chief of that division.

CHARACTERISTICS OF THE WEATHER FOR MAY, 1895.

The barometric pressure was generally in excess east of the Rocky Mountains, and with this there was an excess of sunshine, deficiency of rainfall, and excess of temperature. Injurious frosts occurred in many States, especially on the 13th, 14th, 19th, 20th, and 21st. The local storms and tornadoes on the 3d were a special feature of this month. The stage of waters in the Mississippi and tributaries was generally low.

ATMOSPHERIC PRESSURE (*in inches and hundredths*).

The distribution of mean atmospheric pressure reduced to sea level, as shown by mercurial barometers not reduced to standard gravity and as determined from observations taken daily at 8 a. m. and 8 p. m. (seventy-fifth meridian time), is shown by isobars on Chart II. That portion of the reduction to standard gravity that depends on latitude is shown by the numbers printed on the right-hand border.

During the current month the highest mean pressures were in the south Atlantic and east Gulf States. The extreme highest were: Charleston, 30.11; Lynchburg, Raleigh, Knoxville, and Chattanooga, 30.10; Washington and Hatteras, 30.09. The lowest mean pressures were in New Mexico, Arizona, and southern California, as also in Assinniboia. The extreme lowest were 29.78 at Yuma and 29.80 at Calgary.

As compared with the normal for May the mean pressure for the current month was decidedly in excess over the whole country east of the Mississippi. The maximum excesses were: Parkersburg, Lynchburg, and Lexington, 0.09; Nantucket, New London, Cincinnati, St. Louis, Raleigh, and Augusta, 0.08. Pressure was slightly deficient in the upper Missouri Valley and British provinces. The maximum deficits were: Edmonton and Calgary, 0.08; Yuma, 0.06.

As compared with the preceding month of April the pressures reduced to sea level show a rise in the Atlantic and east Gulf States; the maximum rises were: 0.10 at Father Point, 0.09 at Quebec, and 0.08 at Knoxville and Cairo. Elsewhere the pressure generally fell; the maximum falls were: Williston and Keeler, 0.13; Minnedosa, St. Vincent, Duluth, Salt Lake City, Winnemucca, and Yuma, 0.12.

HIGH AND LOW AREAS.

By PARK MORRILL, Forecast Official.

The storm areas of this month were all of a kind that may be termed the Northwest type. Of these areas of low pressure perhaps all have their ultimate origin over the North Pacific Ocean, although some are first observed in the western Canadian provinces, and occasionally one forms, possibly as a secondary to a more northerly main depression, in the Dakotas or Minnesota. Three of the latter sort are included in the low areas of this month. The general course of storms of this character is along the arc of a circle, first moving southeast into the upper Missouri and Mississippi valleys, then east across the Lake region or central valleys, and lastly northeast, most commonly into the Gulf of St. Lawrence, whence they disappear over the Atlantic Ocean.

The movements of the various centers of low pressure are shown in detail on Chart I. An examination of the tracks indicates that, except for a secondary which formed in extreme western Nebraska, and after remaining nearly stationary for three days in Nebraska and Kansas, finally was absorbed into another depression, and for a further temporary incursion of area II into Kansas, all the tracks lie north of the fortieth parallel. It is rather remarkable that no storm of the Southwest type was experienced during the entire month.

The tracks of high pressure areas for the month, as shown on Chart IV, are much more widely distributed. Area I was remarkable for its southwest movement along the Atlantic coast from the 1st to the 4th. The persistence of high pressure on the Pacific coast is a noticeable feature of the month.

On no less than fifteen days an area of high pressure is clearly indicated on the coast of northern California, Oregon, or Washington. The general type of high areas of this month was that which appears in the western Canadian provinces and advances southeast along the Rocky Mountain slopes, either to the Gulf of Mexico or turning eastward across the central valleys to the middle Atlantic coast.

HIGH AREAS.

Six areas of high pressure are plotted on Chart IV, brief descriptions of which are given below.

I.—The month opened with an extensive area of high pressure central in the lower St. Lawrence Valley. By the evening of the 1st this had moved southeast across northern New England to the ocean. During the 2d and 3d this area of high pressure apparently moved southwest, outside the coast line, the center again reaching land, on the South Carolina coast, at the a. m. observation of the 4th. At the p. m. observation of the 4th this area had seemingly been absorbed into a vast high area which existed over the Atlantic, as indicated by the continued high pressure at Bermuda. The entire anomalous movement of this area was apparently a part of the phenomena attendant on the pressure of this great Atlantic high. During this period rains, at one or two points of considerable amount, fell in the middle and south Atlantic districts. The western edge of the area of high pressure, which existed over the ocean, covered the northern coast until the 8th and continued evident in the South two days longer.

II.—This area was remarkable in the length of time during which it was an effective feature of our weather conditions. It appeared off the south Pacific coast at the p. m. report of the 2d. Its course was then northward along the coast until the morning of the 9th; then, turning eastward, it crossed the mountains and followed their eastern slope southward until it finally passed off the Texas coast during the night of the 12th. It was thus clearly identified for a period of ten days. During its movement along the Rocky Mountain slope it was accompanied by freezing temperatures and general frosts in Montana, the Dakotas, Nebraska, Kansas, and Colorado.

III.—This area developed during the night of the 12th in the upper Missouri Valley, and advanced southeast and east for two days. At the end of that time it had become a narrow belt of high pressure stretching from Upper Michigan to South Carolina; it subsequently flattened out and disappeared. It was accompanied by killing frosts in the upper Mississippi Valley. The frost area extended so far east as to embrace Upper Michigan, Indiana, and western Kentucky.

IV.—The fourth well-defined high area appeared on the Pacific coast; its approach was heralded by a rapid rise of pressure at Eureka on the 12th. During the following night it apparently moved north, the pressure rising rapidly in western Oregon and Washington. Its northerly movement continued until the evening of the 14th, when the center was apparently situated some hundreds of miles north of our boundary. Its course was then changed to east and southeast, and at the morning report of the 15th the center was located near Calgary. Its subsequent course was nearly straight, in a southeast direction, until it reached the Texan coast on the 18th. It was thus a factor of our weather conditions for six days. During its southerly movement low temperatures accompanied it, but not as severe as those of area II. Frosts occurred in Montana and Colorado.

V.—On the 17th the pressure began to rise in Saskatchewan, and on the morning of the 18th was 30.46 at Prince Albert. The area of high pressure extended, while its center remained nearly stationary, and by the morning of the 19th embraced the northern Rocky Mountain slope and the Missouri and upper Mississippi valleys. Frosts were again reported in South Dakota and Minnesota at this time. On the 19th the center began an advance southeast, which terminated on the Carolina coast on the 23d. After reaching the coast the movement changed to a northeasterly direction, and the western edge of the high area was apparent on the northern coast until the 26th. Very low temperatures accompanied the advance of this area across the central valleys, and frosts were general throughout the upper Missouri and Mississippi valleys, the Lake region, and the Ohio Valley.

VI.—From the 17th to the 23d an area of high pressure was apparently located off the north Pacific coast. On the 24th this high pressure gave way, and on the next day a depression appeared on the Oregon and Washington coast. At the same time a high appeared in Alberta and advanced southward. This seems to have been the same high area which had existed over the ocean, and which followed a similar course to that of No. III, crossing the coast north of our boundary, and then curving to the east and south. As it advanced into the interior of the country the pressure rapidly diminished, and on the evening of the 26th was high only by comparison with the deep depressions which existed on either side of it. On the following morning it had again built up, while advancing eastward. During the 28th it was merged into the general area of high pressure, whose western edge had covered Florida for the previous twenty-four hours. After this junction the latter remained nearly stationary until the end of the month, embracing within its area the region south of the Lakes, and extending westward nearly to the Mississippi River. During this time the center remained outside the coast line.

LOW AREAS.

On Chart I are plotted the tracks of eight centers of low pressures. The average rate of movement of these storms ranges from 15 to 28, the mean rate for all being 21.8 miles per hour. Area VII is remarkable for the very low pressure attained at its center (28.90), and for the energetic secondary which formed in its southern portion. All are noticeable for the high latitude maintained throughout their eastern movement. Details of the individual areas follow.

I.—At the morning observation of the 1st a belt of low pressure covered the Rocky Mountain district, extending from British Columbia to Texas. There were indications of the existence of a center of low pressure far to the northwest, beyond the limits of observation. At the following report the center of low pressure had advanced to the vicinity of Calgary. It remained nearly stationary for the next twenty-four hours, first decreasing and then increasing in depth. At the evening observation of the 2d it was in the vicinity of Medicine Hat, where the pressure had fallen to 29.38 inches. On the morning of the 3d the main center seems to have advanced southeast to the vicinity of Miles City, while subsidiary depressions existed near Qu'Appelle and Valentine, respectively. At the following observation the centers were again united and located between Pierre and Bismarck. Between the evening of the 3d and the morning of the 4th the center turned due northeast, and at the afternoon report of the 4th had reached Winnipeg, after which it passed out of view into the Hudson Bay territory. This disturbance was accompanied by rain far to the southeast of the center, reaching even to the Gulf. This fact is, however, probably to be attributed in part to the presence of an area of high pressure on the Atlantic coast, by the action of which the moist air of the Gulf was forced northward through the central valleys.

II.—This depression appeared in the vicinity of Calgary on the evening of the 6th, and for seven days its course is traced across the Northwest, the lower Lake region, and the St. Lawrence Valley, until it finally reached the Gulf of St. Lawrence on the night of the 13th. Its track is noticeable

for the abrupt movements southward, which occurred on the 9th and 12th. Both of these movements seem to have been due to the reaction of areas of high pressure adjoining the low. Until the center had reached Kansas, on the 9th, little or no rain had fallen within the area of low pressure. Subsequently light rains fell to the north and northwest of the center.

III.—This area of low pressure was faintly indicated by the reports from Saskatchewan and Assinniboia on the evening of the 11th. On the following morning the center of slight energy was well defined in the vicinity of St. Vincent. Its course was southeast to Illinois and then eastward to the coast near New York, where it arrived on the evening of the 14th. After reaching the Atlantic its course changed to northeast. Striking the coast of Nova Scotia on the evening of the 15th, it moved northward across this province and then recurved to the northwest and disappeared in the Hudson Bay territory.

IV.—The edge of this depression was visible in Alberta on the evening of the 12th. On the following morning the center was well defined in the vicinity of Edmonton, and during the next twenty-four hours advanced eastward to Prince Albert. In the subsequent twenty-four hours it moved south-southeast to South Dakota, and at the same time a depression formed farther south, in southern Kansas. At the next report both had been filled up by an advancing high.

V.—On the 16th there were indications of an area of low pressure on the coast of British Columbia, and on the morning of the 17th there seemed to be an offshoot from this area in Saskatchewan. The sudden advance of a high from the north apparently forced this depression southward to South Dakota, and its subsequent course is traced as track V. Its movement was nearly east to Ontario, and then northeast down the St. Lawrence Valley. Its energy was at no time great, but it was accompanied by considerable rainfall in the Lake region.

VI.—This area was slow in movement, occupying five days in its translation from North Dakota to the province of Quebec. Its first appearance is seen on the p. m. map of the 21st, on which the southern side of a depression is visible in Assinniboia and Montana. The following day the depression seems to have receded northward. On the morning of the 23d either this depression with much diminished energy, or a secondary development from the main area, was central near St. Vincent, and its subsequent movement is indicated by track VI. It remained nearly stationary for thirty-six hours and afterward advanced eastward across the Lake region and down the St. Lawrence Valley. Its energy increased as it approached the Lake region and moderate rains accompanied it. After reaching the vicinity of Quebec, it passed northward into the Hudson Bay territory.

VII.—This depression appeared in British Columbia on the morning of the 25th. Its center seems to have been situated far to the north and to have been advancing eastward in high latitudes until the evening of the 26th. At that time the center was near Edmonton, where the remarkably low pressure of 28.94 inches was reported. It remained nearly stationary during the following twenty-four hours and, at the same time, a second low formed in western Nebraska. These two centers, designated as VII and VII*a*, existed separately and well defined, as portions of one great depression, for thirty-six hours. During this time they moved southward until, on the morning of the 29th, they were found in southern Minnesota and western Kansas, respectively. The more northerly one seems then to have moved rapidly to the northeast, and there are indications that it ultimately reached the Atlantic near Newfoundland. The southerly one was visible for twenty-four hours longer, remaining nearly stationary, and was then absorbed into a new low, which had advanced from the northwest. The progress of this storm was marked by violent winds and, during its latter part, by abundant rains. The depth of the depression was unusual, a barometer of 28.88 being reported at Battleford at 8 a. m. of the 27th.

VIII.—This area of low pressure appeared in Alberta on the morning of the 29th and, after remaining stationary for thirty-six hours, moved rapidly to South Dakota, then returned and reached the vicinity of Winnipeg by the evening of the 31st.

MOVEMENT OF CENTERS.

The following table shows the date and location of the center for the beginning and ending of each area of high or low pressure that has appeared on the U. S. weather maps during the month, together with the average daily and hourly velocities. The monthly averages are computed in two ways; first, by considering each path as a unit, and second, by giving equal weight to each day of observation:

Movement of centers of areas of high and low pressure.

Number.	First observed.			Last observed.			Path.		Average velocities.	
	Date.	Lat. N.	Long. W.	Date.	Lat. N.	Long W.	Length.	Duration.	Daily.	Hourly.
High areas.		°	°		°	°	*Miles.*	*Days.*	*Miles.*	*Miles.*
I	1, a. m.	49	69	4, a. m.	32	79	1,500	3.0	500	20.8
II*	9, a. m.	47	124	13, a. m.	28	91	2,600	4.0	650	27.1
III	13, a. m.	45	95	15, a. m.	40	82	700	2.0	350	14.6
IV	15, a. m.	51	115	18, a. m.	31	97	1,700	3.0	567	23.6
V†	19, a. m.	54	105	23, a. m.	36	79	1,900	4.0	475	19.8
VI	25, a. m.	51	107	28, a. m.	39	80	1,800	3.0	600	25.0
Sums							10,200	19.0	3,142	
Mean of 6 paths									524	21.8
Mean of 19 days									537	22.4
Low areas.										
I	1, p. m.	51	113	4, p. m.	50	97	1,100	3.0	367	15.3
II	6, p. m.	51	117	13, p. m.	48	64	4,500	7.0	643	26.8
III	12, a. m.	48	97	17, a. m.	49	64	2,350	5.0	470	19.6
IV	13, a. m.	53	114	15, a. m.	43	99	1,150	2.0	575	24.0
V	17, p. m.	45	99	20, a. m.	49	67	1,650	2.5	660	27.5
VI	23, a. m.	48	98	28, a. m.	48	70	2,050	5.0	410	17.1
VII	26, p. m.	54	113	29, a. m.	44	94	1,350	2.5	540	22.5
VIII	29, a. m.	52	114	31, p. m.	49	96	1,300	2.5	520	21.7
Sums							15,450	29.5	4,185	
Mean of 8 paths									523	21.8
Mean of 29.5 days									524	21.8

*Only that portion of the path subsequent to the center's entrance within the coast line is considered.

†The thirty-six hours during which the center remained stationary where first observed is not considered.

NORTH ATLANTIC METEOROLOGY.

OCEAN FOG FOR MAY.

The limits of fog belts for May, 1895, as determined by reports from shipmasters, are shown on Chart I by dotted shading. Near the Grand Banks of Newfoundland fog was reported on twenty-five days; between the fifty-fifth and sixty-fifth meridians, on 21 dates; and west of the sixty-fifth meridian, on 21 dates. Compared with the corresponding month of the last seven years, the dates of occurrence of fog

near the Grand Banks numbered 8 more than usual; between the fifty-fifth and sixty-fifth meridians, 8 more than usual; and west of the sixty-fifth meridian, 5 more than usual.

OCEAN ICE FOR MAY.

The limits of the region within which icebergs or field ice were reported for May, 1895, are shown on Chart I by crosses. The southernmost ice reported, a large berg observed on the 6th in the position given, was about one-quarter of a degree farther south than the average southern limit of ice for May, and the easternmost ice reported, 4 large bergs, noted on the 6th, in the position given in the table, was nearly three-quarters of a degree east of the average eastern limit of ice for the month.

The following table shows the southern and eastern limits of the regions within which icebergs or field ice were reported for May during the last thirteen years:

Southern and eastern limits of ice.

Southern limit.			Eastern limit.		
Month.	Lat. N.	Long. W.	Month.	Lat. N.	Long. W.
	° ′	° ′		° ′	° ′
May, 1883	40 30	47 00	May, 1883	45 40	45 12
May, 1884	41 30	47 30	May, 1884	43 30	44 50
May, 1885	40 50	48 15	May, 1885	42 30	40 10
May, 1886	41 36	51 30	May, 1886	48 55	46 13
May, 1887	39 38	46 00	May, 1887	39 38	46 00
May, 1888	41 00	46 00	May, 1888	41 00	46 00
May, 1889	43 07	55 47	May, 1889	49 46	36 48
May, 1890	40 50	50 28	May, 1890	44 12	36 25
May, 1891	40 49	49 07	May, 1891*	48 00	45 00
May, 1892	42 14	51 20	May, 1892	45 05	41 14
May, 1893	41 05	55 55	May, 1893	47 02	42 16
May, 1894	40 34	48 35	May, 1894	43 31	43 37
May, 1895	41 00	49 00	May, 1895	47 00	42 00
Mean	41 08	48 47	Mean	45 04	42 45

*On the 7th three small pieces of ice were reported in N. 49° 08′, W. 35° 40′.

TEMPERATURE OF THE AIR.

[*In degrees Fahrenheit.*]

The mean temperature is given for each station in Table II, for voluntary observers, but in Table I, for the regular stations of the Weather Bureau, both the mean temperatures and the departures from the normal are given for the current month.

The *monthly mean temperature* published in Table I, for the regular stations of the Weather Bureau, is the simple mean of all the daily maxima and minima; for voluntary stations a variety of methods of computation is necessarily allowed, as shown by the notes appended to Table II.

The distribution of the monthly mean temperature of the air over the United States and Canada is shown by the dotted isotherms on Chart II; the lines are drawn over the high irregular surface of the Rocky Mountain plateau, although the temperatures have not been reduced to sea level, and the isotherms, therefore, relate to the average surface of the country occupied by our observers; such isotherms are controlled largely by the local topography, and should be drawn and studied in connection with a contour map.

The extreme mean temperatures were Key West, 79.9; Yuma, 79.2; Eastport, 48.3.

The *regular diurnal period* in temperature is shown by the hourly means given in Table IV for all stations having self-registers.

As compared with the normal for May, the mean temperature for the current month was decidedly in excess from New England and Nova Scotia to the Rocky Mountains. It was deficient in the south Atlantic and Gulf States. The greatest excesses were: White River, 5.6; Sault Ste. Marie, 5.5; Marquette, 5.3; Port Huron, 5.2. The greatest deficits were: Walla Walla, 4.2; Shreveport, 4.1; Springfield, Mo., and Augusta, 3.8; Kittyhawk, 3.7.

Considered by districts, the mean temperatures for the current month show departures from normal temperatures as given in Table I. The greatest positive departure was: Upper Lake, 3.7. The greatest negative departure: South Atlantic, 2.5.

The *years of highest and lowest mean temperature* are shown in Table I of the REVIEW for May, 1894. The mean temperature for May, 1895, was the highest on record at Sault Ste. Marie, 52.5; Topeka, 66.6; Concordia, 66.2; Wichita, 67.4; Tampa, 77.2. It was the lowest on record at Columbia, S. C., 69.8; Augusta, 69.0; Shreveport, 70.2; Palestine, 69.4.

The *maximum and minimum temperatures* of the current month are given in Table I. The highest maxima were Yuma, 109, 8th; Tucson, 101, 7th. The lowest maxima were Eureka, 68, 11th; Port Angeles, 75, 16th. The highest minimum was Key West, 67, 3d. The lowest minimum was Havre, 22, 11th.

The *years of highest maximum and lowest minimum temperatures* are given in the last four columns of Table I of the current REVIEW. During the present month the maximum temperatures were the highest on record at most of the stations in the eastern and central parts of the United States and also at some places on the Pacific coast. The following are the highest: Concordia, 100; Dodge City, 99; Raleigh and Marquette, 98; Point Reyes Light, 82. The minimum temperatures were the lowest on record at Springfield, Ill., 34; Louisville, 36; Parkersburg, 32.

The *accumulated monthly departures* from normal temperatures since January 1 to the end of the current month are given in the second column of the following table, and the average departures are given in the third column, for comparison with the departures of current conditions of vegetation from the normal conditions.

Districts.	Accumulated departures.		Districts.	Accumulated departures.	
	Total.	Average.		Total.	Average.
	°	°		°	°
North Dakota	+11.7	+2.3	New England	−3.2	−0.6
Missouri Valley	+3.8	+0.8	Middle Atlantic	−12.1	−2.4
Northern plateau	+9.3	+1.9	South Atlantic	−17.2	−3.4
North Pacific	+0.4	+0.1	Florida Peninsula	−11.2	−2.2
			East Gulf	−18.3	−3.7
			West Gulf	−15.6	−3.1
			Ohio Valley and Tenn.	−16.2	−3.2
			Lower Lakes	−8.9	−1.8
			Upper Lakes	−1.6	−0.3
			Upper Mississippi	−4.2	−0.8
			Northern slope	−1.5	−0.3
			Middle slope	−2.1	−0.4
			Southern slope (Abilene)	−14.4	−2.9
			Southern plateau	−2.8	−0.6
			Middle plateau	−5.0	−1.0
			Middle Pacific	−2.2	−0.4
			South Pacific	−1.5	−0.3

The *greatest daily range of temperature and the extreme monthly range* are given for each of the regular Weather Bureau stations in Table I, which also gives data from which may be computed the extreme monthly ranges for each station. The largest values among the greatest daily ranges were: North Platte, 48; Pueblo, 47; Olympia, 46; Milwaukee and Havre, 45. The smallest values were: Port Eads, 11; Galveston, 14; Hatteras, 16; Corpus Christi, 17; Key West and Charleston, 18; Pensacola, 19; Jupiter, 20. Among the extreme monthly ranges the largest values were: Marquette

and Huron, 70; Alpena and Pierre, 68; North Platte, Port Huron, and Concordia, 65. The smallest values were: Key West and Galveston, 21; Port Eads, 22; Eureka, 26; Corpus Christi, 27.

The *limit of freezing weather* is shown on Chart VI by the isotherm of minimum 32° and the limit of frost by the isotherm of minimum 40°.

FROST.

Reports of damage by frost were received from the following States on the respective dates:

10th.—Idaho.
11th.—North Dakota and Iowa.
12th.—Iowa, Missouri, Minnesota, Nebraska, and Ohio.
13th.—New York, Ohio, Pennsylvania, Minnesota, Missouri, Virginia, West Virginia, Tennessee, and Kentucky.
14th.—Wisconsin, Massachusetts, Illinois, Iowa, Connecticut, Vermont, and Alabama.
15th.—Michigan.
16th.—Michigan and Missouri.
17th.—New York, New Jersey, Ohio, Kansas, and Connecticut.
18th.—Alabama.
19th.—Pennsylvania and South Dakota.
20th.—South Dakota, Pennsylvania, and New York.
21st.—Michigan, South Dakota, Minnesota, Iowa, and New York.
22d.—Alabama and New York.

The frosts of the 13th, 14th, 19th, 20th, and 21st in Pennsylvania and western New York are said to have been nearly as severe as the great freeze of the 4th and 5th of June, 1859. The grape crop was severely injured.

Special reports forwarded by the Weather Bureau observer at Erie state that, by the frosts of the 12th and 20th in northwestern Pennsylvania, grapes, early apples, pears, cherries, early roses, strawberries, corn, and tomatoes, so far as they were above ground, were pretty generally killed. From Sunday night (May 12) to Tuesday night (May 21) the thermometer at nighttime ranged from 21° to 22°, and was nowhere above 24°; in the daytime the range was from 44° to 50°. The previous warm or hot spell had brought vegetation forward remarkably; the grape shoots that are now all gone were 6 and 10 inches long.

HOT WINDS.

At Concordia, Kans., the maximum temperature of the month, 100° on the 8th, was accompanied by a very dry atmosphere, withering vegetation, especially corn. On the 9th a very hot, dry, southwest wind backing to southerly was also very injurious, especially to fruit.

MOISTURE.

The *quantity of moisture* in the atmosphere at any time may be expressed by means of the weight contained in a cubic foot of air, or by the tension or pressure of the vapor, or by the temperature of the dew-point. The mean dew-points for each station of the Weather Bureau, as deduced from observations made at 8 a. m. and 8 p. m., daily, are given in Table I.

The *rate of evaporation* from a special surface of water on muslin at any moment determines the *temperature of the wet-bulb thermometer*. An evaporometer may be made to record the quantity of water evaporated from a similar surface during any interval of time. This, therefore, would sum up or integrate the effect of those influences that determine the temperature as given by the wet bulb; from this evaporation the *average humidity of the air* during any given interval of time may be deduced.

The *sensible temperature* experienced by the human body and attributed to the atmosphere depends not merely upon the temperature of the air, but equally upon the dryness and the wind, and is apparently the same as the temperature of the wet-bulb thermometer as obtained by the whirling apparatus used in the shaded shelter. The temperature of the wet-bulb thermometer and its depression below the dry bulb are the fundamental data for all investigations into the relation between human physiology and the atmosphere. In order to present a monthly summary of the atmospheric conditions from a hygienic and physiological point of view, Table VIII has been prepared, showing the maximum, minimum, and mean readings of the wet-bulb thermometer at 8 a. m. and 8 p. m., seventy-fifth meridian time.

PRECIPITATION.

[*In inches and hundredths.*]

The *distribution of precipitation* for the month of May, 1895, as determined by reports from about 2,500 stations, is exhibited on Chart III. The numerical details are given in Tables I, II, and III.

The precipitation for the current month was heaviest, 6 to 13 inches, on the coasts of Washington and Oregon, and 5 to 10 inches in eastern Texas, but least, namely, zero, in portions of Arizona, Idaho, and southern California.

The *diurnal variation* is shown by Table XII, which gives the total precipitation for each hour of seventy-fifth meridian time, as deduced from self-registering gauges kept at about 43 regular stations of the Weather Bureau; of these 37 are float gauges and 6 are weighing gauges.

The *normal precipitation* for each month is shown in the Atlas of Bulletin C, entitled "Rainfall and Snow of the United States, compiled to the end of 1891, with annual, seasonal, monthly, and other charts."

The *current departures* from the normal precipitation are given in Table I, which shows that precipitation was in excess in the west Gulf States and on the coasts of Washington and Oregon. It was deficient in the eastern Rocky Mountain slope. The large excesses were: Port Eads, 7.5; Neah Bay, 6.3; Fort Canby, 5.5; Astoria, 5.3. The large deficits were: Omaha, 3.4; Meridian, 3.8; Concordia, 3.2; Indianapolis, 3.1.

The *average departure* for each district is also given in Table I. By dividing these by the respective normals the following corresponding percentages are obtained (precipitation is in excess when the percentages of the normal exceeds 100):

Above the normal: East Gulf, 128; west Gulf, 131; North Dakota, 126; southern plateau, 444; middle plateau, 113; northern plateau, 121; north Pacific, 216; middle Pacific, 119.

Below the normal: New England, 97; middle Atlantic, 97; south Atlantic, 95; Florida Peninsula, 82; Ohio Valley and Tennessee, 64; Lower Lake, 78; Upper Lake, 97; Upper Mississippi, 69; Missouri Valley, 65; northern slope, 71;

middle slope, 59; Abilene (southern slope), 45; southern Pacific, 75.

The *years of greatest and least precipitation* are given in the REVIEW for May, 1894. The precipitation for the current month was the greatest on record at Neah Bay, 10.77; Fort Canby, 8.19; Astoria, 8.52; Olympia, 5.93; Pueblo, 2.45; Santa Fe, 3.46; Port Eads, 10.27; Norfolk, 8.60. It was the least on record at Eastport, 1.29; Columbus, Ohio, 1.73; Indianapolis, 1.07; Memphis, 0.46; Springfield, Mo., 3.54; Concordia, 1.01; Baker City, 1.25; Havre, 0.43.

The *total accumulated monthly departures* from normal precipitation from the beginning of the year to the end of the current month are given in the second column of the following table; the third column gives the ratio of the current accumulated precipitation to its normal value.

Districts.	Accumulated departures.	Accumulated precipitation.	Districts.	Accumulated departures.	Accumulated precipitation.
Excesses.	*Inches.*	*Per ct.*	*Deficits.*	*Inches.*	*Per ct.*
South Atlantic	+ 2.20	110	New England	— 3.10	84
Florida Peninsula	+ 0.50	103	Middle Atlantic	— 0.40	98
North Dakota	+ 0.20	103	East Gulf	— 1.00	96
Southern plateau	+ 0.40	116	West Gulf	— 3.90	80
North Pacific	+ 1.20	104	Ohio Valley and Tenn.	— 6.30	71
Normal.			Lower Lakes	— 3.80	72
Northern slope	0.00	100	Upper Lakes	— 2.60	78
			Upper Mississippi	— 5.10	61
			Missouri Valley	— 4.00	67
			Middle slope	— 2.90	66
			Southern slope (Abilene)	— 4.50	64
			Middle plateau	— 0.30	96
			Northern plateau	— 2.10	76
			Middle Pacific	— 1.60	91
			South Pacific	— 2.10	82

Details as to excessive precipitation are given in Tables XIII and XIV.

The total snowfall at each station is given in Table II.

HAIL FOR MAY, 1895.

The following are the dates on which hail fell in the respective States:

Alabama, 2, 5, 6, 7. Arkansas, 1, 5, 6, 15. California, 10, 13, 16, 26, 27, 28. Colorado, 16, 21 to 24. District of Columbia, 14. Florida, 6, 10, 20. Idaho, 3, 9, 20, 26, 27, 28. Illinois, 2, 4, 5, 6, 8, 10, 14, 17, 18, 21. Indiana, 2, 5, 6, 10, 13; Indian Territory, 15, 20, 24, 30. Iowa, 1 to 7, 11, 12, 20, 28. Kansas, 1, 3, 5, 6, 8, 10, 15, 29, 30. Kentucky, 2, 12, 13, 14. Louisiana, 1, 4, 5, 11, 23. Maine, 8. Maryland, 7, 11, 12, 14. Massachusetts, 2, 15. Michigan, 6, 10, 12, 17, 20. Minnesota, 1 to 4, 8, 9, 10, 12, 14, 16 to 21, 24, 28, 29, 30. Mississippi, 1, 2. Missouri, 1, 3, 4, 6 to 11, 14, 15, 18, 19. Montana, 10. Nebraska, 1 to 8, 10, 11, 15, 19, 23, 29, 30. Nevada, 15, 18, 19, 27, 28, 29, 31. New Hampshire, 15, 31. New Jersey, 14. New Mexico, 18, 20, 22 to 25, 29, 30. New York, 7, 8, 11, 12. North Carolina, 5, 6, 14, 16, 21, 26. North Dakota, 2, 3, 14, 18, 24. Ohio, 5, 8, 10, 11, 13, 20, 22, 23. Oklahoma, 29. Oregon, 7, 8, 9, 20, 21, 26, 27, 28, 30, 31. Pennsylvania, 4, 11. South Carolina, 11, 16. South Dakota, 1, 2, 3, 5, 10, 12, 15, 26. Tennessee, 2, 11, 12, 13. Texas, 1, 4, 5, 15 to 18, 21 to 25. Utah, 17, 28, 31. Vermont, 8. Virginia, 11, 15, 19, 20. Washington, 3, 4, 6, 7, 8, 20, 21, 26 to 31. West Virginia, 6, 10, 12, 20. Wisconsin, 3 to 7, 9 to 12, 17, 18, 26, 27. Wyoming, 3, 31.

SLEET FOR MAY, 1895.

The following are the dates on which sleet fell in the respective States:

Alabama, 2. California, 28. Colorado, 10, 16, 20, 21, 23, 29, 30, 31. Idaho, 30, 31. Indiana, 13. Iowa, 9, 10, 20. Kentucky, 15. Michigan, 11, 13, 14, 26. Minnesota, 18, 19. Montana, 9, 28. Nebraska, 19. Nevada, 2, 27, 28, 30, 31. New York, 12. North Dakota, 19. Ohio, 13, 14. Oklahoma, 11. Oregon, 3, 26. Pennsylvania, 12, 19. South Dakota, 18. Tennessee, 12. Utah, 27, 28, 31. Washington, 4. Wisconsin, 4, 11, 12, 13, 15, 31.

HAIL FOR FEBRUARY, 1895.

The following are the dates on which hail fell in the respective States:

Alabama, 19. Arizona, 13. California, 12, 22. Florida and Georgia, 19. Illinois, 20. Louisiana, 9. New Mexico, 25, 26. South Carolina, 19. Utah, 24. Washington, 15, 23.

SLEET FOR FEBRUARY, 1895.

The following are the dates on which sleet occurred in the respective States:

Alabama, 11, 12, 14, 15. Arkansas, 6, 10, 11, 18. California, 12. Colorado, 23, 24, 25, 28. Connecticut, 25, 28. Delaware, 16. Florida, 14, 15. Georgia, 6, 7, 10, 11, 12, 14, 15, 16. Idaho, 13, 17, 23. Illinois, 9, 10, 20. Indiana, 6, 9, 10. Iowa, 17. Kansas, 17, 18. Kentucky, 20. Louisiana, 5, 7, 9 to 16, 19. Maine, 8, 18. Maryland, 2, 7, 16, 22, 27. Massachusetts, 8, 27. Michigan, 20, 21, 24, 25. Minnesota, 20. Mississippi, 6, 9 to 12, 15, 19, 22. Missouri, 6, 7, 17, 18, 22, 25. Montana, 21. Nebraska, 1, 17, 18. Nevada, 8 to 13, 22, 24. New Jersey, 1, 2, 4, 7, 8. New York, 9, 19, 27, 28. North Carolina, 2 to 5, 7, 12, 15, 16, 17. Ohio, 3, 7, 14, 17, 18, 21. Oregon, 11, 12, 15, 23. Pennsylvania, 2. Rhode Island, 8. South Carolina, 6, 7, 11, 12, 15, 16, 19. South Dakota, 28. Tennessee, 5, 6. Texas, 1, 9, 10, 11, 13. Utah and Vermont, 25. Virginia, 16, 17. Washington, 11. West Virginia, 22. Wisconsin, 19, 20.

HAIL FOR MARCH, 1895.

The following are the dates on which hail fell in the respective States:

Alabama, 13. Arizona, 14. Arkansas, 15, 20. California, 12 to 15, 17, 20, 21, 22, 27, 28. Colorado, 4, 30. Connecticut and Delaware, 25. Georgia, 13, 14, 20. Idaho, 28. Indiana, 24, 25. Indian Territory, 30, 31. Kansas, 19, 24, 31. Kentucky, 8, 24, 25. Louisiana, 13, 14. Maryland, 9, 25. Massachusetts, 25, 26. Mississippi, 12 to 15. Missouri, 19, 26 to 31. Nebraska, 31. New Jersey, 25, 29. New Mexico, 12, 18. New York, 25, 26. North Carolina, 7. North Dakota, 30. Ohio, 24, 25. Oregon, 20 to 23, 26 to 29. Pennsylvania, 2, 15, 25, 28. South Carolina, 2. South Dakota, 31. Tennessee, 8, 15, 20. Texas, 10, 12, 13, 25, 29, 31. Utah, 12, 13, 28, 29. Virginia, 2, 8, 30. Washington, 2, 11, 14, 15, 19 to 23, 28, 29, 30. West Virginia, 25. Wisconsin, 23.

SLEET FOR MARCH, 1895.

The following are the dates on which sleet fell in the respective States:

Arkansas, 6, 14, 15, 16, 19. California, 13, 15. Colorado, 13, 14, 28 to 31. Connecticut, 2, 13, 15, 16, 28. Delaware, 3, 11, 15, 16, 29. District of Columbia, 2, 9, 11, 15, 20. Georgia, 21. Idaho, 12, 21. Illinois, 1, 11 to 15, 30, 31. Indiana, 8, 11, 14, 15, 20. Indian Territory, 14. Iowa, 7, 12, 29, 31. Kansas, 3, 10, 11, 13, 14, 19, 20, 30, 31. Kentucky, 8, 14, 15, 16, 20, 21. Maine, 9, 15, 24, 25. Maryland, 2, 11, 14, 15, 16, 19, 20, 24, 25. Massachusetts, 2, 4, 5, 16, 22, 25, 28. Michigan, 1, 8, 12, 26, 29, 30, 31. Minnesota, 7, 22, 24, 29, 30, 31. Mississippi, 1, 2, 20. Missouri, 3, 8, 10 to 15, 19, 20, 25, 26. Montana, 7, 22, 23. Nebraska, 8, 10, 30, 31. Nevada, 13, 14, 17, 18, 27, 28, 29. New Hampshire, 25, 26. New Jersey, 2, 11, 12, 14, 15, 16, 24, 29, 30. New York, 14, 15, 25, 29, 30. North Carolina, 3, 19, 20, 21, 24. North Dakota, 6, 31. Ohio, 1, 4, 7, 8, 9, 11, 13 to 17, 20, 31. Oklahoma, 13, 14, 19. Oregon, 2, 11, 12, 14, 20, 21, 22, 28. Pennsylvania, 2, 9, 12 to 15, 24, 25, 29, 30. Rhode Island, 2, 5. South Dakota, 9, 14, 31. Tennessee, 2, 4, 8, 16. Texas, 14. Utah, 12, 29. Virginia, 2, 20, 24. Washington, 20 to 23, 28. West Virginia, 14, 15, 16, 19, 20, 25, 27. Wisconsin, 23, 30, 31.

WIND.

The *prevailing winds* for May, 1895, viz, those which were recorded most frequently, are shown in Table I for the regular Weather Bureau stations.

The *resultant winds*, as deduced from the personal observations made at 8 a. m. and 8 p. m., are given in Table IX. These latter resultants are also shown graphically on Chart II, where the small figure attached to each arrow shows the number of hours that this resultant prevailed, on the assumption that each of the morning and evening observations represents one hour's duration of a uniform wind of average velocity; these figures indicate the relative extent to which winds from different directions counterbalanced each other.

Maximum wind velocities of 50 miles or more per hour were reported at regular stations of the Weather Bureau as follows (maximum velocities are averages for five minutes; extreme velocities are gusts of shorter duration, and are not given in this table):

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
		Miles				*Miles*	
Amarillo, Tex.	10	58	n.	El Paso, Tex.	28	50	sw.
Do.	15	56	n.	Do.	29	62	nw.
Do.	28	54	s.	Huron, S. Dak.	3	51	se.
Do.	30	52	s.	Do.	14	50	se.
Fort Canby, Wash.	3	56	s.	Kittyhawk, N. C.	22	50	ne.
Do.	6	65	s.	Moorhead, Minn.	3	61	se.
Do.	7	66	s.	Do.	27	54	se.
Do.	26	54	s.	Pueblo, Colo.	30	54	n.
Chicago, Ill.	13	50	n.	Williston, N. Dak.	14	60	nw.
Des Moines, Iowa.	13	50	sw.	Winnemucca, Nev.	26	68	sw.
Dodge City, Kans.	28	50	s.				

LOCAL STORMS.

Destructive or severe local storms were reported as follows:

1st.—Near Halstead, Kans., tornado about 4.30 p. m.; 11 persons killed, 12 or more injured. Patterson, Nebr., tornado, funnel-shaped cloud; 8 persons killed. Near Steffenville, Mo., thunderstorm. Furnas County, Nebr., hailstorm.

2d.—Hillsboro, Wis., thunderstorm. Humbird, Minn., windstorm.

3d.—La Crosse, Wis., Marshall and Sibley, and several places in Clinton County, Iowa, thunderstorms. Langdon, Mo., and College Springs, Iowa, hailstorms. [See page 173.]

4th.—North Bridgeton, Me., Boston, Mass., Hannibal, Mo., and Delavan, Wis., thunderstorms.

5th.—Little Rock, Ark., thunderstorm. Dayton, Tenn., windstorm. Ashton, Ill., thunderstorm; horse killed by lightning. Peoria, Princeton, Harvard, and Galesburg, Ill., thunderstorms.

6th.—Hale County, Ala., and Omaha, Nebr., hailstorms.

7th.—Middlesex, N. Y., rainstorm. Gadsden, Ala., thunderstorm. Near Emilie, La., thunderstorm; 1 person killed by lightning. Clinton, Iowa, hailstorm. Toronto, Kans., and St. Cloud, Minn., thunderstorms.

8th.—Newtonville, N. Y., thunderstorm; 6 horses killed by lightning. Atlanta, Ga., thunderstorm; 3 persons injured by lightning. Pensacola, Fla., Sidney, Ohio, and Detroit, Mich., thunderstorms. Yates Center, Kans., thunderstorm; 3 horses killed by lightning.

9th.—Mobile, Ala., thunderstorm. Hermansville, Miss., windstorm. Duluth, Minn., thunderstorm, 2 miles out on the bay; 2 men were killed and 2 were injured by lightning.

10th.—Malone, N. Y., thunderstorm. Williamsport, Md., windstorm. Columbus, Ohio, thunderstorm; 1 person stunned and 2 horses killed by lightning. Fostoria, Ohio, and Hesperia, Mich., thunderstorms; stock killed by lightning. Clear Lake, Minn., and Keokuk, Iowa, thunderstorms.

11th.—Rochester, Elmira, and Silver Springs, N. Y., hailstorms. Erie, Pa., and North Hammond, N. Y., thunderstorms. Hanover, Pa., thunderstorm; 1 person killed by lightning. Columbus, Ohio, thunderstorm; 1 person stunned by lightning. Ravenna and Ashtabula, Ohio, thunderstorms.

13th.—Chattanooga, Tenn., windstorm. Rugby, Tenn., thunderstorm; stock killed by lightning. Port Angeles, Wash., windstorm.

14th.—Van Alstyne, Tex., thunderstorm.

16th.—Near Abilene, Tex., hailstorm. Headsville, Tex., thunder and rain storm; child drowned. San Antonio, Tex., windstorm; several persons injured.

20th.—Near Lynchburg and Crewe, Va., hailstorms. Ashland, Va., windstorm.

21st.—El Paso, Tex., thunderstorm.

22d.—Rockport, Tex., thunderstorm.

24th.—Moulton, Tex., thunderstorm. Roscoe, Nebr., thunderstorm; one person killed by lightning.

25th.—Near Denton, Tex., windstorm. Galva, Ill., thunderstorm. Kemp, Ind. T., windstorm; stock killed. Paradise, Nev., windstorm.

26th.—Friendship, N. Y., thunderstorm.

27th.—Independence, Cal., windstorm.

28th.—Minneapolis, Minn., thunderstorm. Greenfield and Spencer, Iowa, and Medicine Lodge, Kans., windstorms.

30th.—Chapman, Nebr., windstorm. Santa Fe, N. Mex., snowstorm.

31st.—Norwalk, Conn., thunderstorm.

ATMOSPHERIC ELECTRICITY.

Numerical statistics relative to auroras and thunderstorms are given in Table X, which shows the number of stations from which meteorological reports were received, and the number of such stations reporting thunderstorms (T) and auroras (A) in each State and on each day of the month, respectively.

The dates on which reports of thunderstorms for the whole country were most numerous were: 1st, 173; 2d, 140; 3d, 142; 4th, 179; 5th, 169; 6th, 216; 7th, 228; 8th, 174; 10th, 180; 11th, 171; 26th, 108.

Thunderstorm reports were most numerous in: Ohio, 236; Wisconsin, 166; Texas, 102; Florida, 156; Illinois, 143; Iowa, 142; Louisiana, 151; Minnesota, 154; Missouri, 243.

Thunderstorms were most frequent in: Tennessee, where they were reported on twenty-one days; Texas, twenty-four days; Wisconsin, twenty-three days; Florida, twenty-four days; Iowa, twenty-three days; Missouri, twenty-five days.

Auroras.—The evenings on which bright moonlight must have interfered with observations of faint auroras are assumed to be the four preceding and following the date of full moon, viz, from the 4th to the 12th, inclusive. On the remaining twenty-two days of this month 60 reports were received, or an average of about three per day. The dates on which the reported number especially exceeded this average were: 28th (9) and the 29th (10).

Auroras were reported by a large percentage of observers in: North Dakota, 33.

Auroras were most frequent in: North Dakota, on eight days; Washington, six days; Massachusetts, seven days.

CANADIAN DATA—THUNDERSTORMS AND AURORAS.

Auroras were reported as follows: 1st, Quebec. 3d, Port Arthur. 6th, Medicine Hat. 17th, Charlottetown. 19th, Port Arthur. 20th, Minnedosa. 21st, Quebec and Port Arthur. 28th, Toronto. 29th, Port Arthur. 30th, Charlottetown, Medicine Hat, and Prince Albert.

Thunderstorms were reported as follows: 1st, Prince Albert. 2d, Minnedosa and Medicine Hat. 3d, Charlottetown, Port Stanley, Minnedosa, and Medicine Hat. 4th, Saugeen, Port Arthur, Winnipeg, and Qu'Appelle, 5th, Father Point. 6th, White River, Port Stanley, and Edmonton. 7th, Father Point, Montreal, Rockliffe, and Toronto. 8th, Quebec and Montreal. 9th, St. Andrews and Port Arthur. 10th, Swift Current. 11th, Father Point, Quebec, Montreal, Rockliffe, Toronto, Saugeen, and Parry Sound. 23d, Minnedosa. 26th, Rockliffe, Parry Sound, and Medicine Hat. 27th, Minnedosa. 29th, White River. 30th, Father Point and Edmonton. 31st, Yarmouth and St. Andrews.

SUNSHINE AND CLOUDINESS.

The quantity of sunshine, and therefore of heat, received by the atmosphere, as a whole, is very nearly constant from year to year, but the proportion received by the surface of the earth depends largely upon the absorption by the atmosphere, and varies with the distribution of cloudiness. The sunshine is now recorded automatically at 17 regular stations of the Weather Bureau by its photographic, and at 28 by its thermal effects. At three stations records are kept by both methods. The results are given in Table XI for each hour of local, not seventy-fifth meridian, time. The cloudiness is determined by numerous personal observations at all stations during the daytime, and is given in the column of "average cloudiness" in Table I; its complement or clear sky is given in the last column of Table XI.

COMPARISON OF SUNSHINE AND CLEAR SKY.

The sunshine registers give the *duration* of direct sunshine whence the percentage of possible sunshine is derived; the observer's personal estimates give the percentage of *area* of clear sky. It should not be assumed that these numbers should agree, and for comparative purposes they have been brought together, side by side, in the following table, from which it appears that, in general, the instrumental record of percentages of duration of sunshine is almost always larger than the observer's personal estimates of percentages of area of clear sky; the average excess for May, 1895, is 11 per cent for photographic records, and 13 per cent for thermometric records. The details are shown in the following table:

Difference between instrumental and personal observations of sunshine.

Photographic stations.	Instrumental.	Personal.	Difference.	Thermometric stations.	Instrumental.	Personal.	Difference.
Tucson, Ariz	87	65	22	Key West, Fla	80	59	21
Cleveland, Ohio	69	58	11	St. Louis, Mo	80	59	21
Dodge City, Kans	69	61	8	San Francisco, Cal	74	65	9
Denver, Colo	68	51	17	Buffalo, N. Y	73	54	19
Kansas City, Mo	68	52	16	Chicago, Ill	73	62	11
Cincinnati, Ohio	67	55	12	Cincinnati, Ohio	72	55	17
Salt Lake City, Utah	67	45	22	Rochester, N. Y	72	58	14
Memphis, Tenn	64	58	6	Columbus, Ohio	69	49	20
Santa Fe, N. Mex	63	54	9	Detroit, Mich	68	60	8
Helena, Mont	59	50	9	Portland, Me	68	39	29
Savannah, Ga	59	51	8	Salt Lake City, Utah	67	45	22
Galveston, Tex	59	58	1	Atlanta, Ga	65	53	12
San Diego, Cal	50	54	− 4	Louisville, Ky	64	50	14
Eastport, Me	48	36	12	New Haven, Conn	64	60	4
Bismarck, N. Dak	46	45	1	Boston, Mass	63	46	17
Spokane, Wash	46	30	16	Marquette, Mich	62	35	27
Portland, Oreg	44	40	4	Vicksburg, Miss	62	55	7
				Washington, D. C	62	51	11
				Norfolk, Va	61	62	− 1
				Philadelphia, Pa	61	44	17
				Little Rock, Ark	60	41	19
				Des Moines, Iowa	58	42	16
				New Orleans, La	55	55	0
				New York, N. Y	55	50	5
				Baltimore, Md	54	48	6
				Seattle, Wash	46	32	14
				Wilmington, N. C	45	45	0
				Portland, Oreg	44	40	4

METEOROLOGY AND MAGNETISM.

By Prof. FRANK H. BIGELOW.

For general remarks relative to this subject see page 7 of the REVIEW for January, 1895.

The comparison of the air temperature with magnetic horizontal force is shown in detail on Chart V, and the special features of the May curves are as follows:

SPECIAL FEATURES OF THE MAY CURVES.

There are no corrections for amplitude or slope. For the mean datum +2 is applied to temperature and +17 to magnetic force. The barometric pressures of May are plotted exactly as for April.

INLAND NAVIGATION.

The *extreme and average stages of water* in the rivers during the current month are given in Table VII, from which it appears that none of the rivers there recorded reached the danger line during the month; the nearest approach was that of the Sacramento, which was within 3 feet of the danger line on the 9th.

STATE WEATHER SERVICES.

By Mr. JAMES BERRY, Chief of State Weather Service Division.

The following extracts are taken from the reviews published by the services of the respective States:

Alabama.—The most notable feature of the weather for the month was the prolonged cool spell over the entire State from the 19th to the 28th, during which time the temperature ranged from 2° to 17° below the seasonal normals, and light frosts occurred in exposed places in the northern portions on the 13th, 14th, 18th, and 22d. The month closed with very warm weather during the last two days, when the temperature was as high as 98° in the northeast portion. The average

temperature for the State for the month was 69.3°, being 4° less than the normal. The average total precipitation for the month, 3.98 inches, was 0.03 of an inch in excess of the normal amount. Showers were light but frequent during the month, and on the 2d and 3d a very heavy rainfall occurred at Oxanna, amounting to 3.65 inches in twenty-four hours.

Arkansas.—The monthly mean temperature was 69°, which is 0.1° below the normal. The temperature was above the normal during the first decade of the month, the excess ranging from 3° to 8°. From the 11th to 27th, inclusive, the departure ranged from 1° to 13° below the normal, averaging 7° per day; from the 28th to the close of the month it averaged 4° per day above. The weather during the month was generally favorable for the cultivation of crops, but too cool for rapid growth, and in some sections the scarcity of moisture was detrimental to crops in general, but especially so to wheat and oats. At the end of the month, however, a marked improvement in the condition of all crops was reported. The monthly rainfall was heaviest over the western portion of the State, and lightest over the eastern portion, the greatest amount, 7.23 inches, occurring at Dallas, and the least, 1.16 inch, at Gaines Landing. The average amount for the State, 3.91 inches, shows a departure of —0.94 inch. Heavy frosts were reported from Fayetteville and Keesees Ferry on the 12th, doing no material damage, and occurring chiefly in the valleys and lowlands.

California.—The average temperature was 63.9°, or 0.2° less than the normal. The highest temperature for the month, 116°, was reported from Salton and Volcano Springs, on the 8th, and the lowest, 15°, at Bodie, on the 29th. The average total precipitation for the State, 1.02 inch, was 0.13 of an inch above the normal. Thunderstorms occurred on the 15th, 16th, 18th, and 19th.

Colorado.—The month was slightly warmer than the average, the mean temperature for the State, 53°, being about half a degree above the normal. The highest temperature occurred generally on the 8th and 27th; the maximum, 106°, occurring at Crook, Logan Co., on the 27th, and the lowest, 6°, at Breckenridge, Summit Co., on the 17th. Early garden stuff, strawberries, and other small fruits sustained some damage by the frosts which occurred generally throughout the farming sections of the State from the 10th to 18th. The average precipitation for the State was 2.60 inches, which is half an inch greater than the normal. Showers were frequent, the wettest periods being the 16th, 19th to 24th, 29th and 30th. Precipitation on the latter date was general over the State, and in many instances the measurements were more than half of the total amount for the month.

Connecticut.—(See *New England.*)

Delaware.—(See *Maryland.*)

Florida.—No abnormal features obtained during the month. On the contrary, the conditions were about the average. The mean temperature for the State, 79.5°, was but 0.1° below the normal, and the average total precipitation, 4.46 inches, but 0.14 of an inch less than the normal. The greatest monthly rainfall occurred at Merritts Island, and amounted to 9.31 inches; the least at Mullet Key, where 1.15 inch was reported.

Georgia.—The month of May was noticeable for its frequent rains and abnormally cool weather. Although the weather during the first decade of the month was slightly warmer than was seasonable, a cool wave spread over the State on the morning of the 12th, and on that morning and several thereafter light frosts were noted in the northern and in exposed places in the central counties. From the 10th to the expiration of the month there were few days on which the temperature reached the seasonal normal. The average temperature of the month for the State, as a whole, was 69.8°, being nearly 2° below the normal. Showers and thunderstorms were frequent in all parts of the State, but the greatest amount of rainfall was in the northeastern counties and the least in the western section.

Idaho.—The month opened with cool weather and showery conditions prevailing generally over the State, remaining so until the 7th; a period of cool weather began on the 8th and continued until the 20th, when another rainy period set in, lasting two days; rain was general from the 25th to 28th. The coldest days were the 9th and 10th, when killing frosts and freezing temperatures occurred over nearly the entire State. The mean temperature of the State for the month of May, 1895, 52.0°, was higher by 3° than for May, 1894, and the average total precipitation, 2.19 inches, was greater by 0.85 of an inch.

Illinois.—The month was an exceptionally erratic one, filled with extremes both of heat and cold and largely given to drought. The first ten days of the month were abnormally hot with average rainfall, the next fifteen abnormally cold with decreasing rainfall, and the last six again abnormally hot with drought. In almost the entire State the lowest temperature of the second decade, in some instances the lowest ever recorded for the month, was recorded on the 14th. The average temperature for the State was 63.8°, which is 2° above the normal. The highest temperature recorded was 102°, at Olney, on the 31st, and the lowest was 24°, at Clear Creek and Philo, on the morning of the 14th, on which date a temperature of 32° or below, with slight exceptions, covered the entire State. The rainfall came in generous and quite general showers during the first fifteen days, with scattered showers on the 17–18th, and again in northern counties on the 25th and 30th. The rainfall for the State, as a whole, shows a deficiency of about 2.00 inches. Light frosts were general over the State on the 12th, 19th, 20th, and 27th; and killing frosts on the 14th, 16th, and 21st, with touches of frost in some parts of the State on the 11th, 13th, 15th, 17th, 18th, and 23d. The frost on the morning of the 14th was more severe and wrought more general havoc than any at so late a period for many years.

Indiana.—Great changes in temperature occurred during the month; the first decade was decidedly warm, followed from the 11th to 27th by low temperatures, and the last days were again exceedingly hot. The cold period which occurs invariably in every month of May came later this year and was more continuous and severe; frost and ice formed on several days. The average temperature for the State for May was 1.8° above the normal, and an excess was noted in all sections. The drought continued, as rain fell only on a few days in small quantities. The average amount for the State, 1.63 inch, is 2.58 inches below the normal; the rains in the southern portion were slightly heavier than in other sections. Frosts formed on many days, those of the 14th and 21st were very injurious, and ice formed in localities on several days during the cold spell. Snow fell at a few stations in the northern portion in small quantities on one day.

Indian Territory.—(See *Oklahoma.*)

Iowa.—The monthly mean temperature of the whole State was 61.7°, which is 2.0° above the normal. It was a month of extremes and sharp fluctuations in temperature, the range being from 94° to 32° or below. The average for the first decade was about 12° above the normal. From the 10th to the 22d the average was about 10° below the normal, and the closing week brought the temperature up again somewhat above the normal, so that the mean for the whole month was higher than the average. There were two periods of general frost thoughout the State, 11th to 14th and 19th to 22d. All sections were visited by killing frost on one or more days, causing much damage in the aggregate. By the close of the month, however, the field crops had mostly recovered their lost ground, and the conditions were then very favorable. The average rainfall for the State was 3.19 inches, which is about 1 inch below the seasonal normal. During the afternoon and evening of the 3d, severe local storms developed in the northern half of the State, causing loss of life and destruction of property, doing the greatest damage in Sioux County.

Kansas.—May opened very warm, with a storm central between Pueblo, Colo., and Dodge City, causing southeast and east winds, with fair rains; a tornado occurred in Harvey County, injuring 7 or 8 people, killing about 60 head of horses, cattle, and hogs, and destroying several houses, barns, and other buildings. Light rains occurred over the State on the 3d, with the temperature ranging from 10° to 17° above the normal. Unusually warm weather prevailed during the next seven days, with light scattered showers in the western and middle divisions and good rains in the eastern; the maximum temperature for the month was recorded in a large part of the State on the 8th and 9th. A cold wave occurred on the night of the 10–11th, producing severe frosts in the western division and western half of the middle division, light frosts in the eastern north half, and none in the south half. The mean temperature was 65.8°, which is 2.7° above the normal, and the average amount of precipitation was 2.57 inches, a deficiency of 1.11 inch below the usual amount for May. Duststorms occurred on the 27th and 28th.

Kentucky.—The month of May was remarkable for the abnormally great fluctuations in temperature. From the 13th to 15th, inclusive, severe frosts occurred throughout the State, many stations reporting temperatures below the freezing point on the 13th. These temperatures are the lowest on record for the second decade of May, and likewise the excessively high temperatures of the last three days of the month surpassed any others of which there is a record for the third decade. The precipitation amounted to 3.16 inches, which is less than half an inch below the normal. The distribution of rainfall was not uniform, and hence in some localities was insufficient for the needs of vegetation. The southern and eastern counties were more favored than some of the western counties, where at the close of the month a condition of partial drought existed.

Louisiana.—The temperature during May averaged 72.6°, just about the normal; the rainfall, 5.59 inches, being an excess of 1.78 inch. Notwithstanding that the temperature averaged about the normal, the rather cloudy and wet weather that prevailed during the greater portion of the month served to retard the growth of vegetation materially, and as a result at the close of the month we find vegetation late. The damage from the cool weather was solely in a retardation of growth, though affecting cotton by making it lousy and delaying the germination of seed.

Maine.—(See *New England.*)

Maryland.—The monthly mean temperature was 61.5°, being 1.1° below normal, and the amount of precipitation, 3.33 inches, was 0.47 of an inch below. The highest temperature recorded during the month was 101° at Hancock, Md., on the 30th; and the lowest, 20°, at Deer Park, Md., on the 18th and 22d. Killing frosts were reported on the 13th, 14th, 15th, 17th, 22d, and 23d. The greatest amount of snow reported, 7 inches, occurred at Oakland.

Massachusetts.—(See *New England.*)

Michigan.—The mean temperature for the month was 57.5°, which

is 1.8° above the normal; the temperature was above the normal in each section of the State as follows: Upper Peninsula, 6.5°; northern counties, 4.0°; central counties, 1.8°, and southern counties, 1.9°. Altogether the temperature was above the normal on sixteen days, normal on one day, and below on fourteen days. The highest temperature recorded at any station in the State during the month was 100° at Berrien Springs, on the 31st, and the lowest was 20° at Grayling and Boon on the 15th. This latter temperature was caused by the severe cold wave which swept across the State during the 14th, 15th, and 16th, and which caused general and destructive frosts in all sections. The average precipitation for the State for the month, 2.89 inches, was 0.63 of an inch below the normal. The departures from the normal in each section were as follows: Upper Peninsula, 2.61 inches above the normal; northern counties, 0.36 of an inch below the normal; central counties, 0.70 of an inch below the normal, and southern counties, 1.71 inch below the normal. It will be seen that the excessive rainfall over the Upper Peninsula brings up the general average for the State, and that a deficiency prevailed in all sections of the Lower Peninsula. Frosts occurred as late as the 26th.

Minnesota.—The average temperature for the State for the month of May, 1895, was 56.9°, and the average amount of precipitation, 3.30 inches. The greatest amount of rainfall for the month, 6.67 inches, was reported from Winona, and the least, 1.34 inch, from Moorhead. The maximum temperature for the month was 96°, and was reported from Bingham Lake on the 27th and Wabasha on the 29th, and the minimum temperature, 13°, was reported from Sandy Lake Dam on the 27th.

Mississippi.—The mean temperature for May, 1895, was 70.8°, or 1.5° below the normal. The highest during the month was 98° at Aberdeen, Macon, and Yazoo City, on the 31st. The record of 101° at Rosedale on the 30th is subject to correction, owing to the fact that the thermometer was exposed to the rays of the sun. The lowest temperature was 30°, and occurred at Corinth on the 14th. Heavy rains fell in the coast counties, and about normal amounts generally over the remaining southern and southeastern districts during the month, but elsewhere there was a deficiency. The driest sections were Clay, Lowndes, and Noxubee counties, and the entire delta country. The mean monthly precipitation was 3.34 inches, which is less than the normal rainfall for May by 0.81 of an inch. Hail fell on the 1st, 2d, 5th, and 6th, hailstones being reported, from Aberdeen, on the 2d, as large as hen's eggs. Crop prospects, highly favorable until the middle of the month, were impaired by the cold weather at that time, and cotton has not since entirely recovered. The close of the month saw all other products in good condition except oats, which has given poor to fair yields.

Missouri.—The mean temperature of the month was about normal in the southeast section, about 1° below in the southwest section, and from 1° to 2° above in the central and northern sections. The mean temperature for the State was 64.5°, or 0.8° above the normal. The highest temperature during the month, 103°, occurred at Darksville, Randolph County, on the 9th; the lowest, 28°, at Pickering, Nodaway County, on the 12th. At St. Louis the maximum temperature of the 31st, 94°, is the highest recorded at that station during any May since the establishment of the Weather Bureau. The precipitation was about normal in the southwest section, slightly in excess in the northeast section, and deficient in the remaining sections, the greatest departure from normal being in the southeast section, where the average deficiency amounted to 1.78 inch. The average precipitation for the State for the month, 4.10 inches, is 0.71 of an inch below the normal. Killing frosts occurred in portions of the State on the 11th, 12th, 13th, 14th, 15th, 16th, 17th, 22d, and 23d; those of the 12th and 14th being the most destructive; corn, beans, potatoes, melons, and tender vegetation on low ground were killed or greatly damaged in many of the northern and eastern counties, and in some localities fruit and wheat were also seriously injured.

Montana.—The temperature for May, 1895, was about 1° above the normal, the average for the State was 52°, and the average amount of precipitation for the month, 1 inch, or 0.69 of an inch below normal. The highest daily temperature was 94° at Musselshell on the 13th, and the lowest, 17°, at Fort Logan, on the 11th.

Nebraska.—The mean temperature for the State was 59.1°, which is 1.8° below normal. The highest temperature reported from the State was 110°, at Broken Bow, on the 8th, and the lowest, 23°, at Lexington, on the 10th. The average amount of precipitation for the State was 2.40 inches, which is about two-thirds of the normal amount. The driest section was the northwestern, with an average rainfall of 1.71 inch; the heaviest rainfall was in the central section, where the average was 3.16 inches. The largest rainfall reported at any one station was 7.16 inches at Grand Island and the least was 0.82 of an inch at Springfield. Heavy frosts were general in the northern portion of the State on the 11th and 12th, and light frosts on the same dates in the southern portion. Light frosts were general in the northern portion on the 19th and 20th.

Nevada.—The temperature during the month was nearly normal, the average being 56.1°, a deficiency of 0.3°. Generally, the western and west-central portions of the State received less sunshine than usual, and the northern and southern a greater amount. The highest temperature, 105°, was reported from St. Thomas, on the 8th, and the lowest, 18°, at Elko, on the 1st. The rain and snow was less than that usually experienced in May, the deficiency being 0.42 of an inch. The greatest monthly amount was 2.66 inches, at Austin, and the least, 0.00, at Palisade. Fully one-third of the stations reported snow, the average depth being 2.5 inches. Thunderstorms occurred on the 1st, 14th to 19th, inclusive, 23d, and 28th. The first part of May was very favorable for all crops grown in this State. The weather, while not very warm, was far above the freezing limit. On the 29th (in some parts of the State on the 28th, 30th, and 31st), however, a severe frost occurred, killing on an average two-thirds of the first blossoms and blackening all vegetation above ground. The heavy wind of the 28th was very destructive to vegetation, whipping off the green fruit, and in many instances breaking down the trees. Some crop correspondents give this wind credit for more destructive effects than the frosts. The gale was general throughout the State. Reports from the northern and southern extremes show the same results.

New England.—The mean temperature for May over this district was 57.2°, an excess of 2.5° above the average. The departure was least along the southern coast, and greatest in the north-central districts. The middle of the month was unusually cold with killing frosts in all low places on the 14th, 17th, 19th, and 22d. Very low temperatures were experienced in the extreme north on the 1st, and near the southeast coast on the 2d. The frosts did considerable damage in the south to garden truck where it was above ground, and injured grapes and strawberries. Large fruits were not badly injured, except in some low valleys in the central counties. The average precipitation for May was 2.49 inches, a deficit of 1.14 inch. A slight excess of precipitation was recorded at the southeastern stations, but generally there was a deficiency of from 1 to 2 inches. A trace of snow fell in the highlands in the north on the 14th and 16th, and at places in the south on the 16th.

New Hampshire.—(See *New England.*)

New Jersey.—The mean temperature for the State for May was 60.9°, or 0.7° above the normal for the month. The means for the various districts were as follows: The Highlands and Kittatinny Valley, 60.7°; the red stone plain, 60.9°; the southern interior, 62.5°; and the sea coast, 60.9°. The warmest days were the 9th, 10th, 11th, 29th, 30th, and 31st, when the maximum temperatures ranged from 92° to 102°. The minimum temperatures ranged from 28° to 42° on the 12th, 13th, 16th, 17th, 20th, 21st, and 23d. Precipitation was quite general throughout the State on the 12th, 14th, 18th, 21st, 26th, 27th, and in the central and southern sections on the 1st. The average total amount for the month, 2.85 inches, was 0.99 of an inch below the normal. Killing frosts were reported as late as the 23d.

New Mexico.—The temperature during the month of May averaged a little below the normal. The warmest period was from the 8th to the 10th, and the coldest from the 1st to the 3d, and 30th and 31st. The precipitation was quite heavy, averaging much above the normal, but was unevenly distributed. The north-central and northeastern sections and the Pecos Valley were favored with heavy rains, while the lower Rio Grande Valley and the southwestern parts of the Territory received only light rains. There was quite a fall of moist snow on the 30th in the northern part, and at a few stations in that section light frosts were also reported, but they were not severe enough to cause any serious damage.

New York.—During May the weather was influenced by five areas of high and five areas of low pressure, which is rather less than the usual number of disturbances for the month in this vicinity. The areas were generally large, sluggish in movement, and of moderate intensity. The weather was remarkable for great ranges and variability of temperature, a very deficient rainfall, and more than the usual amount of sunshine, especially during the first and last decades. There was a corresponding fluctuation in the condition of crops, which were in a very advanced stage early in the month, but apparently suffered very seriously from the cold of the middle of the month, and finally were restored to nearly their usual vigor by the warmth and showers of the last week. There were no severe general rains or windstorms, but thunderstorms, in some cases accompanied by hail, caused some damage in scattered localities, especially near Rochester and Elmira on the 11th, where much damage to vegetation was reported. The average of the mean temperatures shows an excess of 2.3° above the normal, and the average amount of precipitation, 0.99 inch below. The temperature departures were greatest in the vicinity of Lake Ontario and the St. Lawrence Valley, and the least near the Atlantic coast. The rainfall was most deficient in the vicinity of the central lakes and western highlands, and more nearly normal in the Great Lake region and on the northern plateau.

North Carolina.—The month of May was characterized by unusually low minimum temperatures during the second and third decades, by the extreme heat of the last days, when the maximum temperature exceeded, with one exception, the highest previously recorded in May, and by the large number of rainy days, though the average precipitation was only about half an inch above the normal. The mean temperature for the month, 64.1°, is 2.8° below the normal, and the average amount of precipitation, 4.83 inches, is 0.63 inch above. The coldest periods were the 12th to 15th, and about the 23d, on all of which

dates frost occurred, especially on the 15th, extending as far south as Wilmington and Southport. The rise in temperature during the last few days was very rapid, the highest, 99°, was recorded at several places in the central portion of the State on the 31st. The effect of these conditions on crops was bad. Plowing and planting was much hindered, and growth of all staple crops retarded, until at the end of May, the season was from two to four weeks late everywhere.

North Dakota.—The month of May has been characterized by a deficiency in temperature and sunshine and an excess of precipitation. While frosts have been more frequent than usual, they have not, on the whole, been destructive to vegetation. The mean temperature for the month, 54.4°, is 1.3° below the normal; and the precipitation, 2.48 inches, 0.23 of an inch above. The highest temperature during the month was 101°, at Larimore, on the 8th, and the lowest, 15°, at White Earth, on the 20th.

Ohio.—The mean temperature for the State for May, 61.1°, is 1.3° above the average, and the precipitation, 1.80 inch, is 4.43 inches below. The rainfall is the smallest on record for May since the opening of the service. The maximum temperature for the month was 102° on the 30th, at Milligan, and on the 31st, at Warsaw, and is the highest maximum on record; the minimum temperature was 19°, at Norwalk, on the 21st, which is the lowest minimum on record. Killing frosts, with ice and light snow during the cold period, caused great damage to the corn crop, wheat, oats, barley, rye, young clover on lowlands, cherries, grapes, and garden vegetables. The corn and grapes were nearly all destroyed, and replanting of corn was in general progress at the close of the month. The hot dry periods at the opening and close of the month caused too rapid maturing of the cereals and grass, causing them to head out unusually short and close to the ground. The droughty conditions were general over the State, and all crops suffered. The grass fields looked brown and bare as if in August.

Oklahoma.—The mean temperature for the month was 69.9°, which is 1.3° above the normal, and the precipitation, 2.91 inches, is 2.39 inches below. Light frosts occurred on the lowlands on the 11th and 12th, and over the Territories as far south as Healdton, Chickasaw Nation, doing no damage. The month closed with the long drought unbroken over the greater part of old Oklahoma, and the prospects for corn lessening daily.

Oregon.—This month's weather conditions were very favorable to all crops grown in this State. The mean temperature, 54.0°, is 1.8° below the average, and the precipitation, 4.80 inches, 2.62 inches above. In the coast and Willamette Valley districts the excess of precipitation was very great, being over 7 inches in the former and over 3 inches in the latter. At the close of the month the outlook for cereal crops was much better everywhere, but more particularly in eastern Oregon. While frosts, both light and killing, were frequent during the month, yet in the western half of the State there was no damage to vegetation worth mentioning, and in the eastern half the crops were not sufficiently advanced, except in a few isolated places, to be damaged by the frosts. The weather has been all that could be desired by the farmers and agriculturists generally.

Pennsylvania.—High temperatures prevailed until the 11th, causing rapid growth to vegetation. On the night of the 12–13th a severe frost occurred, which killed the greater portion of the grape crop and badly injured other fruits. This was followed on the 17th by another damaging frost and freeze, which added additional injury to fruit, corn, and early vegetables. The average temperature for the month, 60.6°, is 1.4° above the normal. The highest temperature recorded during the month was 110°, reported at Hollidaysburg, on the 30th, and the lowest, 22°, at Smethport, on the 17th. The average amount of precipitation for the State for the month was 2.68 inches, being 2.90 inches less than the average.

Rhode Island.—(See *New England.*)

South Carolina.—The mean temperature was 69°, which is 1.6° below the normal, and the precipitation, 4.36 inches, is 0.84 of an inch above. The month exhibited almost the extreme variations in temperature ever recorded during May. The period from the 13th to 28th was cool and continuously below the normal, with light frosts over the greater portion of the State on the mornings of the 13th and 15th and at a few places on the morning of the 23d. These frosts did no material injury, except to check crop growth and development. The month was not generally favorable for agricultural interests, chiefly on account of the cool weather.

South Dakota.—The monthly mean temperature, 57.2°, was about 1.8° above the normal, and the precipitation, 2.36 inches, was 1.12 inch less than the usual amount. A remarkable feature of the month was the late and severe frost. Frosts were frequent, and killing frosts occurred over the eastern portion of the State as far south as Huron as late as the 26th. Corn, potatoes, flax, and garden vegetables were cut to the ground in many localities and over much of the State; fruit was almost entirely destroyed where unprotected; small grain crops did not suffer permanent injury, and most of the corn and potatoes recovered.

Tennessee.—The month of May showed but few abnormal features, the low temperature during the second decade being the most pronounced. This period culminated in frosts and in some localities freezing temperature, which seriously injured and retarded the growth of vegetation. The closing days showed quite a high temperature in many parts of the State. The average temperature for the month was 64.9°, being less than 1° below the normal; the precipitation for the month, 3.10 inches, was less than the usual amount for May by nearly an inch.

Texas.—The average temperature for May, for the State, was 2.0° below the normal and the rainfall 2.78 inches in excess of the normal. A severe norther for this season of the year prevailed from the 11th to the 13th, and the temperature fell 10° to 16° and ranged from 5° to 10° below the normal. The minimum temperature for the month at nearly all stations was recorded on these dates. On the night of the 21st and on the 22d high winds, with rain and hail, did much damage to crops in some localities. The wind at Salado, Bell Co., was very severe, and large corn was badly blown down and much of it broken off. Oats were also blown down. At Rockport, on the 22d, over 25 residences were reported blown from their foundations.

Utah.—The temperature for May, 1895, averaged about 1° below the normal, and the precipitation, 1.16 inch, about 0.76 of an inch below. The highest temperature recorded during the month was 99°, at St. George, on the 7th, 8th, and 25th, and the lowest, 19°, at Filmore on the 10th. The principal portion of the precipitation fell during the first and last weeks of the month. Killing frost was reported as late as the 31st.

Vermont.—(See *New England.*)

Virginia.—The mean temperature for the State averaged a little below the normal for May and the precipitation above. The highest temperature, 102°, was reported from Bon Air and occurred on the 31st, and the lowest, 26°, at Big Stone Gap on the 14th and 15th. Killing frosts were reported on the 13th, 14th, 15th, 16th, 22d, and 23d, doing considerable damage in the western sections.

Washington.—The mean temperature for May, 1895, was 53.4°, which is 1.6° below the normal, while the precipitation, 3.94 inches, is 1.46 inch above. The month averaged eleven clear, ten partly cloudy, and ten cloudy days. Thunderstorms were recorded on the 4th, 26th, 27th, and 30th.

Wisconsin.—The weather during May was unusual in many respects, but the most notable feature was the extremes in temperature, which were the greatest on record, the mean temperature, 57.6°, being 4.0° above, and the average amount of precipitation, 3.83 inches, or 0.15 of an inch below the normal. The highest temperature recorded during the month was 100°, at Crandon, on the 31st, and the lowest, 17°, at Florence on the 14th. During the first week the temperature was considerably above the normal, and vegetation was advancing rapidly when, about the 10th, a sudden change occurred. The temperature fell rapidly, and frosts occurred in some portions of the State every night from the 10th to the 22d, killing all vegetation in some sections, and in all sections tender plants were cut down. Added to this a heavy snowstorm occurred, amounting in the northern part of the State to from 4 to 6 inches. Thunderstorms were frequent from the 1st to the 19th and were reported on five subsequent dates.

Wyoming.—The mean temperature for the month was 51°, which is very near the May normal, while the precipitation, 2.55 inches, is almost an inch in excess of the average amount for that month. The highest temperature for the month was 90°, at Wheatland, on the 8th, and the lowest, 6°, at Wise, on the 10th. Frosts, more or less severe, were reported as late as the 31st.

STUDIES BY FORECAST OFFICIALS.

TROPICAL STORMS OF THE GULF OF MEXICO AND THE ATLANTIC OCEAN IN SEPTEMBER.

By E. B. GARRIOTT: dated August 18, 1893.

The first indications of the approach of a cyclone in the West Indies are abnormally high barometric pressure and unusually cool, clear weather. These conditions may continue several days. The nearer approach of a cyclone is indicated by slowly falling barometer and the appearance in the upper atmosphere of thin, hazy, cirrus clouds. The cirrus clouds thicken, change to cirro-stratus, and, at sunrise and sunset, present dark red and violet tints. The air becomes moist and heavy and the heat oppressive. Following these conditions the cloud bank of the cyclone appears, the barom-

eter falls rapidly, and squalls of wind and rain occur, increasing in intensity as the storm center approaches. Before the recurve the diameter of West India cyclones is 500 to 1,000 miles and their average velocity is 15 to 18 miles per hour. After the recurve they assume larger dimensions and the velocity increases. About 80 per cent of the cyclones traced in the last fifteen years appeared during the months of August, September, and October.

It is the purpose of this paper to deal with West India cyclones that have appeared in September during the last fifteen years, and to state the conditions that have preceded their occurrence in the Gulf of Mexico and on the southern coasts of the United States. As a first step in the direction of discussing the storms of this class the tracks of September cyclones for the fifteen years, 1878 to 1892, inclusive, have been plotted [see Chart IV], and some of the more prominent features shown by the plotted tracks are given in the following table:

Table showing cyclones occurring in September from 1878 to 1892, inclusive.

Year.	Appeared.	Recurved.	Disappeared.
	° °	° °	
1878	N. 11, W. 60. East of Windward Islands	N. 24, W. 81. Florida	South of Iceland.
1878	N. 15, W. 71. Caribbean Sea	N. 19, W. 73. North of Haiti	Northeast of Bahamas.
1878	N. 14, W. 49. East of Windward Islands	N. 25, W. 60. West of Windward Islands	North Sea.
1879	N. 15, W. 68. Caribbean Sea	N. 23, W. 87. Gulf of Mexico	Mid ocean.
1881	N. 25, W. 70. North of Haiti	N. 33, W. 76. North Carolina coast	New England coast.
1882	N. 21, W. 73. North of Haiti	N. 25, W. 88. Gulf of Mexico	Near Iceland.
1883	N. 15, W. 66. Caribbean Sea	N. 30, W. 79. South Atlantic coast	South of lower lakes.
1884	N. 14, W. 77. East of Windward Islands	N. 20, W. 58. Northeast of Windward Islands.	Northeast of Windward Islands.
1885	N. 27, W. 56. Northeast of Windward Islands.	No recurve	South of Nova Scotia.
1885	N. 24, W. 89. North of Yucatan	N. 25, W. 93. Gulf of Mexico	Mid ocean.
1885	N. 23, W. 97. West Gulf	N. 23, W. 97. West Gulf	Northwest of British Isles.
1886	N. 22, W. 66. North of Puerto Rico	No recurve	West of Bermuda.
1886	N. 14, W. 62. Windward Islands	N. 22, W. 97. Gulf of Mexico	Middle Missouri Valley.
1887	N. 13, W. 57. East of Windward Islands	No recurve	Northern Mexico.
1888	N. 20, W. 67. North of Puerto Rico	No recurve	Southern Mexico.
1888	N. 26, W. 80. South of Florida	N. 28, W. 83. East Gulf	Mid ocean.
1888	N. 21, W. 79. Southeast of Florida		West Gulf of St. Lawrence.
1889	N. 20, W. 55. East of Windward Islands	N. 25, W. 56. Northeast of Windward Islands.	Near Azores.
1889	N. 14, W. 56. East of Windward Islands	No recurve	Virginia coast.
1889	N. 14, W. 69. Caribbean Sea	N. 25, W. 92. Central Gulf	East Canada.
1891	N. 24, W. 57. Northeast of Windward Islands.	N. 34, W. 64. Near Bermuda	Near Grand Banks.
1891*			
1892	N. 27, W. 91. Gulf of Mexico		Northeast Labrador.
Mean	N. 19, W. 69.	N. 25, W. 79.	N. 44°, W. 54°.

*Two storms of slight energy appeared over the central Gulf, and two storms advanced east of north from the subtropical region north of the West Indies in 1891.

The chart and table show that 22 cyclones were traced for September during the last fifteen years, an average of about 1.5 per month. This average is somewhat less than the average for August and October. Of this number 5, or about 23 per cent of the cyclones traced, recurved east of the sixty-fifth meridian, and were not felt on the coasts of the United States. A second class embraced those cyclones that recurved between the sixty-fifth and ninetieth meridians. This class may be considered as having followed a normal course, and included 45 per cent of the cyclones traced. A third class, to which 32 per cent of the cyclones belonged, comprises those cyclones that passed west of the ninetieth meridian or reached the United States coasts without a recurve.

In connection with the storms of the first class, i. e., those that recurved east of the sixty-fifth meridian, it will be observed by referring to the chart that they first appeared either east of the fiftieth meridian or north of the twentieth parallel. But two of the storms traced in that region, those of September 12–18, 1878, and September 3–11, 1884, appeared far enough south to render their advance over or near the West Indies a probability. As storms liable to influence the weather conditions of the United States coasts, these two storms only of the first class will be considered. The cyclone of September 12–18, 1878, appeared while a West India storm of great energy occupied the south Atlantic coast. From the 12th to the 15th the cyclone east of the Windward Islands moved westward. During that period the south Atlantic coast storm moved northward, and was replaced by an area of high pressure which covered the Southern States and the Gulf of Mexico. The pressure continued high over the Southern and Southeastern States from the 15th to the 18th. This area of high pressure extended eastward off the southern coast of the United States, and *apparently obstructed* the westward advance of the cyclone referred to, and *forced* a recurve to the northward. The cyclone of September 3–11, 1884, moved westward from the 3d to the 5th. During that period the pressure continued high and 0.10 to 0.15 inch above the normal over the southeastern districts of the United States. During the 6th the high area over the southeastern part of the United States moved eastward, and the cyclone began to recurve to the northward. During the succeeding three days the pressure continued high off the southern coasts of the United States. *In each instance the westward movement of the cyclones which recurved east of the sixty-fifth meridian was apparently prevented by anticyclonic areas which moved eastward over the southern coasts of the United States.*

The second class of storms, i. e., those that recurved between the sixty-fifth and ninetieth meridians, will be considered in connection with the distribution of atmospheric pressure. Forty-five per cent., or 10 of the 22 cyclones traced, belonged to this class. Of this number 5 appeared over the Caribbean Sea, 4 east of the Bahamas, and 1 near the southern extremity of the Florida Peninsula. A study of the charts of the last fifteen years shows that when these storms appeared over the eastern Caribbean Sea or the eastern West India Islands the pressure was above the normal over the western West Indies and the Florida Peninsula. *This high pressure does not appear to have been translated from over the American Continent, but was the result of a slow and steady increase of pressure due possibly to the overflow of air, or the upper currents, from the advancing cyclone.* When the cyclones reached the longitude of eastern Cuba the pressure began to decrease over western Cuba and the southern part of the Florida Peninsula, and, in cases where the storms recurved east of the ninetieth meridian, the pressure increased over the western part of the Gulf of Mexico and over the Southwestern States. Until the cyclones reached the American coast the attendant rain area was small. After the United States coast was reached the rain area extended rapidly, and in some instances the storm center occupied the south Atlantic coast and the rain area covered the Atlantic coast States. When storms of this class reached the longitude of western Cuba the pressure began to give way and rain be-

gan to fall over the Florida Peninsula and the eastern Gulf. Over the western Gulf the pressure continued to rise. *The recurve of these cyclones was apparently due to the obstruction offered to a westward course by anticyclonic areas which had advanced or had been drawn from the continent over the west Gulf and the Southwestern States.*

Thirty-two per cent of the cyclones traced did not recurve to the northward, and had no easterly movement. A large proportion of the cyclones of this class advanced from the eastern West Indies. Upon their arrival in about longitude W. 80°, the average longitude in which September cyclones recurve, the pressure over the west Gulf began to *decrease*, and rain set in, and the interior-eastern districts of the United States were occupied by an extensive anticyclonic area. As storms prefer to follow the path of least resistance, the centers moved toward the region of decreasing pressure and avoided the high and increasing pressure to the northward. When the pressure continued high over the eastern districts of the United States the storms were unable to recurve and were penned in over Mexico or the Southwestern States. In such cases the cyclones usually developed great violence before dissipating. Similarly cyclones of this class that advanced northwestward toward the middle or south Atlantic coasts of the United States were apparently prevented from recurving by high pressure over the ocean to northward and northeastward. Description of storms of this class will be found in the MONTHLY WEATHER REVIEW for September, 1888, and September, 1889. The storm of September, 1888, raged with fearful violence over Cuba and passed thence to southern Mexico. The storm of September, 1889, was exceptionally severe, and dissipated off the middle Atlantic coast.

It may be assumed that with a nearly normal distribution and movement of atmospheric pressure September cyclones will recurve near longitude W. 80° and between latitudes N. 25° and 28°. When a cyclone is central east of Cuba and an area of high pressure is advancing eastward over the Gulf and south Atlantic States, the cyclone will probably recurve east of the Bahamas. When the cyclone reaches central Cuba or longitude W. 80°, and an area of high pressure is advancing over the west Gulf and Southwestern States, the cyclone will probably recurve over Florida or the east Gulf. When the cyclone reaches the seventy-fifth meridian and an area of high pressure is overspreading the interior and eastern districts of the United States, with stationary or falling barometer over the west Gulf and the Southwestern States, the cyclone will probably advance westward over the Gulf of Mexico. When cyclones are moving northwestward toward the south or middle Atlantic coasts of the United States, and the pressure is abnormally high over the Northeastern States and the Canadian Maritime Provinces, the chances are that the storm will not recurve but will be crowded in upon the coast and develop destructive energy.

SPECIAL CONTRIBUTIONS.

CLOUD PHOTOGRAPHY.

By ALFRED J. HENRY, U. S. Weather Bureau. Written August, 1895.

A considerable mass of information concerning the condition of the air at the surface of the earth has been accumulated, but we know very little of what is going on at some distance above us. The regions of the higher atmosphere have been studied to some little extent through the scant data afforded by balloon ascensions, mountain meteorological observatories, and the movements of upper clouds. While the latter method is not so promising in direct results as others that might be mentioned, its simplicity and adaptability commend it to all lovers of science.

The question of cloud photography is of especial interest at the present time in view of the following resolutions passed by the International Meteorological Committee at its meeting in Upsala, August 20–24, 1894:

Since experience shows that the altitude of clouds can be easily determined with sufficient accuracy, the introduction of these investigations into all countries is recommended, preferably by the use of the photographic process. Observations of direction and relative velocity should be made at as many stations as possible, and measures of height at a limited number of suitably distributed stations.

The value of these investigations would be greatly increased if made at the same epoch; therefore, it is proposed that they be commenced May 1, 1896, and continue for one year.

Cloud photography has received more attention during the last ten years than at any time since the introduction of dry plates, and it is now possible, as a result of the combined efforts of amateur photographers and meteorologists to obtain fairly good negatives with comparatively little difficulty. The employment of the camera to permanently fix the appearance of the sky and the changes in form of clouds can not be too strongly recommended. One of the most practical results likely to flow from a close watch of the sky is the ability to associate various cloud forms with coming weather changes. After an experience of four years in this regard I am confirmed in the belief that for the purpose of forecasting the weather from the standpoint of the solitary observer the clouds afford the most valuable data at his command.

With a view of increasing activity in cloud work during the coming year of special observation and to encourage all who may be inclined to take an active interest in cloud photography, the following suggestions are offered:

Apparatus.—No particular form of camera is required. Hand cameras have the advantage of being ready for use at a moment's notice, and when a cloud mass is changing rapidly it is possible to make a series of exposures at a very few seconds' interval. For the best results, however, a tripod camera should be used (unless one adopts the expensive photogrammetric apparatus). A lens of the rectilinear type, having a focal length equal to the diagonal of the plate used, is best suited for cloud work, and one should always be careful to adjust the camera so that the sensitive plate shall be exactly perpendicular to the optical axis of the lens.

Plates.—It is perhaps unnecessary to state that when any color is looked at with the naked eye the sensation experienced is the joint effect of the various elementary colors of which it is composed. When we examine the colors of the spectrum as regards their action on the ordinary photographic plate, we find that those of the greatest visual intensity—yellow and orange—have the least actinic effect, while the blue and violet rays are especially active. When we attempt to photograph the spectrum with the ordinary commercial dry plate, we find that the blue and violet rays are rendered almost white and the remainder of the colors of a uniform blackness.

To reproduce these colors in their correct chromatic value we must use plates that are specially sensitive to the most luminous rays and restrain those rays that are most active, and this is what dry-plate makers aim to accomplish with the so-called isochromatic or orthochromatic plate.

There are various brands of orthochromatic plates on the market, such as Cramer's, Carbutt's, Wuestner's, and others, and, since they tend to maintain the natural relations of light and shade, they are to be recommended for cloud work, although there are conditions when an ordinary slow plate may be used to good advantage. Before determining upon the special plate to use, it is advisable to make a comparative

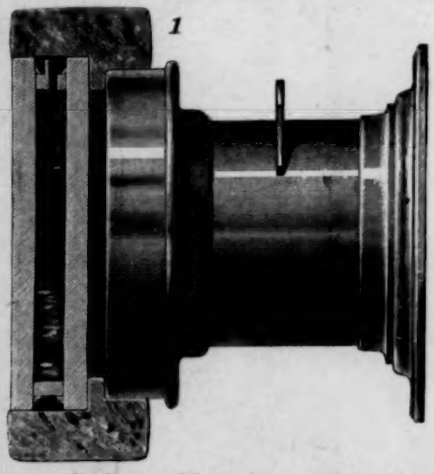
test of those above named, at least. The experience thus gained will be quite valuable and will amply repay one for the expense of the plates.

Orthochromatic plates necessarily require a little more care in their treatment than ordinary plates, since they are especially sensitive to yellow light of any kind. A dark-room light that is safe for a quick plate of the ordinary kind may fog an orthochromatic plate.

Screens.—It is found that the interposition of a suitable color screen between the clouds and the sensitive plate, in order to restrain or subdue the blue and violet rays, adds greatly to the resulting photograph. Various screens have been devised and used with greater or less success. Dr. Riggenbach, of Basle, as early as 1888, described a method that gives very good results. He places a black mirror in front of the lens, so that the plane of the mirror makes an angle of about 33° with the axis of the lens, and thus takes advantage of the fact that some of the blue light of the sky is polarized in a certain plane and is lost by reflexion, while that from a cloud is not. A Nicol prism, or other polarizing apparatus, also gives good results.

In my work, however, only glass and liquid screens have been used. The screen first devised was described and figured in the Scientific American of March 2, 1895.

Through the courtesy of Messrs. Munn & Co., editors and proprietors of that journal, we are able to reproduce the illustrations given herewith. Fig. 1 shows the manner of attach-



ing the screen to the lens. There is no objection to placing the screen back of the lens in the dark chamber of the camera, but it is most convenient to attach it as shown in the drawing.

The second drawing shows the construction of the cell. *a a'* are squares of plate glass, and *b* is a ring cut from a glass tube and ground to render its edges parallel and smooth. The ring is cemented between the two glass plates with balsam of fir or other suitable cement. Two holes are cut in the ring for the introduction of the liquid, one at the top and another at the bottom. The second hole serves to empty the cell quickly; it is not shown in the drawing. A piece of cork, *c*, is used to attach the screen to the front of the lens. The thickness of the screen is shown in the drawing, the diameter will of course vary with the size and angle of the lens.

Theoretically the use of a liquid screen, such as described, should give a slightly distorted image at the edges of the plate, owing to the varying refractive powers of the different media through which the rays of light pass. In practice, however, the distortion, if any, is so slight as to be imperceptible to the naked eye.

The liquid used in the cell is a solution of bichromate of potash, as recommended by Mons. Angot of the French Meteorological Bureau. It is most convenient to make a 10 per cent solution and dilute it until the required density is reached. A 2 per cent solution is sufficiently dense to photograph cumuli and well-lighted clouds when the contrast between cloud and sky is well marked. For cirrus an 8 per cent solution may be used, but there is danger of blurring from prolonged exposure if the clouds are moving rapidly. For this reason a 5 per cent solution with a quick exposure is preferred. The glass color screen, made by Carbutt, is about equivalent to a 2 per cent bichromate solution.

In preparing the bichromate solution care should be taken to see that it is not dense enough to cut off all of the blue rays, the absence of blue in the negative gives an unnatural blackness to the sky that should be avoided as far as possible.

Exposure time.—As in all photographic work the exposure time varies according to the season, the time of day, illumination of the object, the density of the screen used, and other circumstances. With a Carbutt screen, or one of equal density, and a plate of sensitometer No. 20, an exposure of 1½ seconds stop f. 16 will suffice for a well-lighted sky at noon. It has been my experience, however, that it is best to err on the side of over exposure, and trust to the development to correct the result.

A short exposure, while giving the necessary detail, does not give sufficient contrast between cloud and sky, and it is quite difficult to bring out the clouds in bold relief in the subsequent process of printing. Some workers advocate short exposure and subsequent intensification, but the latter process is liable to permanently injure the plate and it is better to avoid it.

Development.—The development of the plate is one of the most important steps in the work.

There does not appear to be a decided advantage in using any one developer in preference to another. Pyro, hydrochinon, and metol may be used indiscriminately, but it is essential that the developer be strong in the reducing agent and highly restrained. The following formula, recommended by Mr. L. E. Jewell of Johns Hopkins University, has been used for several years and gives excellent results:

H	Hydrochinon	1 oz.
	Sulphite soda	5 oz.
	Water	25 oz.
	Alcohol	3 drams.
C	Carbonate of potassium	1 oz.
	Water	100 oz.
P	Yellow prussiate of potash	1 oz.
	Water	100 oz.
B	Bromide of potassium	1 oz.
	Water	10 oz.

For normal developer take—

75 CCH.
12½ CCC.
12½ CCP.
11 drops B.

In general, the development of a cloud negative may be carried further than a simple landscape negative, and it is often necessary, especially in the case of the lighter clouds, to continue the development for some time after the image has apparently vanished from the plate.

It is important, in order to fix the position or the appar-

ent altitude and azimuth of the clouds in the sky, that a small stretch of the horizon be included in the view, and that the direction in which the view is taken, and the direction from which the clouds are moving, as NE., SW., etc., be noted on the photographic plate before development; note also whether the view is from before or behind, from the right or the left of the direction from which the cloud is coming. The entry can be made with an ordinary lead pencil in the corner of the plate. In fact, the date, stop used, and exposure time should all be noted on the plate for future reference.

The foregoing has reference solely to the production of single cloud negatives, and may be considered as the first step in the method of ascertaining the height, direction and rate of motion, and internal changes of clouds by the photographic process. The full method, however, demands the use of two cameras at either end of a measured base, and other apparatus for reducing the observations.

METEOROLOGY AND PUBLIC HEALTH.

By W. F. R. PHILLIPS, M. D., Editor of CLIMATE AND HEALTH.

The aim of this article will be to show briefly the connections between some of the meteorologic elements and public health, and to suggest some uses to which this knowledge may be put.

Although from time immemorial a belief in atmospheric influence upon health appears to have been held, yet real contributions to the knowledge of medical climatology date from a communication made to the Royal Society of London in 1797 by Dr. William Heberden, Jr., F. R. S., on the "Influence of Cold on the Health of the Inhabitants of London," wherein the author showed that a difference of 20° between the mean temperature in London in January, 1795, an excessively cold month, and January, 1796, an equally mild month, caused the deaths in the former to exceed those in the latter by 1,352.

In 1863 Dr. Scoresby-Jackson reported to the Royal Society of Edinburgh the results of a statistical investigation into the influence of weather upon the mortality of eight large cities of Scotland for the six years from 1857 to 1862. The most important result of this investigation was to show, for Scotland at least, that for every diminution of mean temperature below 50° F. there was a corresponding increase of mortality; but that for mean temperatures above 50° F. a diminution was favorable for vitality, at least if the temperature had been for any length of time above 50°. In other words, mean temperature and mortality from all causes had an inverse relationship below 50° F. and a direct relationship above 50° F.

One of the most important contributions to medical climatology was made to the Scottish Meteorological Society by Mr. Buchan and Dr. Mitchell in the communication of their researches into "The Influence of Weather on Mortality from Different Diseases and at Different Ages in London." The results of their labors are too extensive to be epitomized here, but their value may be estimated from the opinion of Dr. B. W. Richardson, that "from the researches of these distinguished men we can indeed forecast in this island [Great Britain] the course of many diseases with a precision that may, to a large degree, be called exact."

The researches of von Pettenkofer in Munich, and of Dr. Baker in Michigan, corroborated by those of other investigators, have established a connection between the depth of the water below the soil and the prevalence of typhoid fever. It appears that a fall of the subsoil water below its average seasonal level is very favorable for the appearance of typhoid fever. It is not to be supposed that the simple fluctuation of the water is a causative agency, but is suggestive of the conditions favoring the development of the typhoid germs.

The effects of high atmospheric temperature in causing an increased mortality from diarrheal diseases, and of a low atmospheric temperature in causing a low mortality from these diseases, is an established fact that no one can dispute, but all attempts to express the diarrheal mortality in a given place as a function of the temperature only have failed. "The reason," says Dr. Longstaff, in his Studies in Statistics, "is probably a simple one, viz: That summer diarrhea is a disease very greatly influenced by temperature, but not caused by it alone; it is rather a communicable zymotic disease that thrives best during hot weather," bearing a direct relation to temperature and an inverse one to rainfall. Longstaff found that, for London, diarrheal diseases became epidemic when the temperature of the water of the Thames reached 62° F.

More than thirty years ago Dr. Henry Bowditch, of Boston, from an exhaustive study of the distribution of consumption in Massachusetts and elsewhere, showed that a residence upon damp soil, whether naturally so, or caused by percolation or defective drainage, was most favorable for the development of phthisis.

The statistical work of Dr. Baker of the Michigan State Board of Health, has added valuable information to our knowledge of some of the conditions under which bronchitis and pneumonia become prevalent. Dr. Baker has suggested as a probable explanation of the greater tendency to these diseases in cold weather, the fact that cold air is necessarily dry air, considered with reference to the weight of aqueous vapor contained, which when respired is exhaled at a much higher temperature, and contains a much greater amount of aqueous vapor than when inhaled. This increase in amount of vapor in the expired air has been acquired by evaporation from the respiratory passages, and is, according to Dr. Baker, a chief factor in the causation of inflammatory affections of these passages so greatly prevalent during the winter months.

An example will illustrate Dr. Baker's argument. At 32° F. a cubic foot of air can hold only 2.1 grains of water in the form of vapor, while at 98° F. (the temperature of the expired air) it can hold 18.7 grains, or 16.6 grains more than at freezing temperature. This illustration shows exactly what takes place whenever we breathe air at 32° F.

The following general propositions have been deduced from statistical considerations, and have been advanced with more or less authoritativeness by many writers on medical climatology:

1. A preternaturally dry air, with a high temperature, predisposes to the development of fevers and intestinal disorders.

2. A very moist atmosphere, accompanied by a low temperature, is likely to induce bronchial and rheumatic affections.

3. In summer and autumn the tendency to sickness and death is chiefly connected with the digestive organs.

4. In summer and autumn a rise of mean temperature above the average increases the number of cases of, and the mortality from, diseases of the digestive organs.

5. A cool and rainy summer controls the prevalence and fatality of diarrheal diseases.

6. Diarrheal diseases become epidemic when the subsoil temperature at a depth of 4 feet below the surface reaches 56° F. for the season.

Within recent years our knowledge of the causation of disease has undergone a very profound change, and many of the theories of atmospheric origin and effect have been shown to be untenable as originally propounded. But the change has been rather in the direction of transferring the effects of atmospheric agencies from man himself to the bacteria that are now universally recognized as the causes of infectious diseases.

In the future we must study the effects of the different meteorologic elements upon these lowly organisms, as well as on man himself.

NOTES BY THE EDITOR.

OBSERVATIONS AT HONOLULU, HAWAIIAN ISLANDS.

Meteorological observations at Honolulu, Republic of Hawaii, by Curtis J. Lyons, Meteorologist to the Government Survey.

Pressure is corrected for temperature and reduced to sea level, but the gravity correction, —0.06, is still to be applied.

The absolute humidity is expressed in grains of water, per cubic foot, and is the average of four observations daily.

The average direction and force of the wind and the average cloudiness for the whole day are given unless they have varied more than usual, in which case the extremes are given. The scale of wind force is 0 to 10.

The rainfall for twenty-four hours is given as measured at 6 a. m. on the respective dates.

May, 1895.	Pressure at sea level.			Temperature.					Humidity.			Wind.		Cloudiness.	Rain measured at 6 a. m.
									Relative.						
	6 a. m.	2 p. m.	9 p. m.	6 a. m.	2 p. m.	9 p. m.	Maximum.	Minimum.	9 a. m.	9 p. m.	Absolute.	Direction.	Force.		
	Ins.	*Ins.*	*Ins.*	°	°	°	°	°	%	%					*Ins.*
1	30.22	30.15	30.20	72	78	73	80	72	62	66	5.9	ne.	3	3	0.00
2	30.22	30.12	30.16	73	79	74	81	73	57	70	6.0	nne.	3	3	0.00
3	30.14	30.09	30.14	73	78	71	80	72	70	90	6.9	se-n.	1	7-10	0.00
4	30.15	30.11	30.19	69	79	73	82	68	69	78	6.8	ene.	2	5	0.12
5	30.20	30.11	30.16	71	80	74	81	67	78	70	6.9	ne.	3	4	0.12
6	30.13	30.08	30.14	72	77	70	80	71	60	84	6.4	ne.	4	4	0.00
7	30.14	30.08	30.18	73	79	74	81	71	70	74	6.7	ne.	4	3	0.02
8	30.20	30.09	30.18	73	78	74	81	72	63	70	6.4	ne.	4	5	0.01
9	30.14	30.04	30.09	72	77	74	78	70	74	70	6.7	ne.	5	5	0.02
10	30.06	29.98	30.04	70	79	72	80	68	60	79	6.2	ne.	4	4	0.08
11	30.04	30.00	30.09	71	77	73	81	70	59	66	6.0	nne.	5	1	0.02
12	30.13	30.06	30.14	72	80	72	82	71	56	73	6.2	nne.	3	1	0.00
13	30.12	30.05	30.10	67	80	69	83	65	61	81	6.4	s-n.	1-0	2	0.00
14	30.08	30.03	30.08	64	78	72	81	61	67	69	6.1	s-ne.	2	2	0.00
15	30.08	30.01	30.10	64	79	73	84	62	60	65	5.8	s-nne.	2	1-3	0.00
16	30.13	30.10	30.16	71	80	75	84	65	60	70	6.4	nne.	3	4-1	0.00
17	30.20	30.10	30.18	73	80	75	83	71	60	70	6.4	ne.	3	4	0.00
18	30.18	30.10	30.16	72	80	74	83	72	60	70	6.4	ne.	3	3	0.00
19	30.14	30.08	30.13	68	79	72	81	66	67	78	6.7	ene.	2	7	0.00
20	30.12	30.07	30.12	67	76	69	82	65	70	90	7.0	s-n.	2	8-10	0.00
21	30.13	30.10	30.15	70	75	75	83	67	73	70	6.7	se-e	4	8	0.70
22	30.15	30.08	30.13	72	79	74	83	67	67	70	6.6	ene.	3	2	0.10
23	30.15	30.10	30.16	72	80	75	83	71	67	70	6.7	ne.	4	1	0.00
24	30.15	30.12	30.16	73	80	76	83	71	65	69	6.6	ene.	4	3	0.04
25	30.18	30.13	30.18	73	79	74	82	71	66	65	6.6	ne.	3	5	0.07
26	30.17	30.12	30.17	73	81	75	81	72	67	66	6.4	ne.	4	5	0.04
27	30.18	30.10	30.16	75	81	75	82	73	61	70	6.8	ne.	4	3	0.00
28	30.16	30.13	30.18	74	80	75	83	73	63	67	6.4	ne.	3	4	0.00
29	30.17	30.10	30.14	73	82	75	83	70	63	83	7.0	ne.	4	3-9	0.00
30	30.16	30.09	30.15	76	81	76	84	73	67	70	7.0	ne.	4	8-3	0.01
31	30.14	30.06	30.13	75	80	77	84	74	68	71	7.0	ne.	4	4	0.00
	30.15	30.08	30.14	71.4	79.1	73.6	.....	.....	64.7	72.7	6.5	.....	.....	.....	1.35

Mean temperature: 6 a. m. + 2 p. m. + 9 p. m. + 3 = 7.47; the normal is 74.3; extreme temperature, 84° and 61°.

The rain period for the month was from the 18th to the 20th throughout the group of islands.

FROSTS IN MAY AT MARDELA SPRINGS, MD.

Mr. A. E. Acworth, voluntary observer at Mardela Springs, Md., states that on May 13 his minimum thermometer went down to 42°. This led him to make an examination of the weather record for May at the neighboring station of Princess Anne for twenty years, and at his own station for the past sixteen years, with the following result:

At Princess Anne there were 103 instances of decided falls in temperature occurring between the 3d and 19th of May, the mean dates being between the 8th and 13th. The average fall was 10.6° below the mean of the month (63.6°); there were two years of no marked fall; five showed a fall of 4°; nine years showed a fall of 5° only; the remaining four ranged from 6° to 11.6°.

At Mardela Springs, from 1879–'94, the mean temperature of the minimum thermometer at 7 a. m. was 63.4°. Throughout the whole period there was but a single day when the minimum thermometer was above this mean, and seventy-eight days, ranging between the 1st and 19th, on which the mean temperature was 52°. From these figures Mr. Acworth concludes that a cold snap may always be expected some time between the 8th and 13th of May.

The frosts recorded in May came before the 11th at Princess Anne in 10 cases out of 17, and before the 10th at Mardela Springs in 9 cases out of 13. He states that a frost bulletin compiled from all accessible sources is a great need.

RAINFALL AND BAROMETRIC PRESSURE.

A correspondent inquires why his barometer does not show low pressure during local storms as it does during the great cyclonic storms. This is a problem that troubled meteorologists for many years, but may now be considered as settled. It is so natural to associate together as cause and effect two phenomena that occur at the same time and place that for a long time it was supposed that the falling of the rain must relieve the atmosphere of just so much weight, thereby causing the barometric pressure to diminish. Brandes, in 1820, published the first general study of a European storm area, viz, that of 1783, and in 1826 further studies of the storms of 1821 and 1822. He found the barometer lowest at the central region and thought that the winds blew toward that. He failed to see the whirlwind character of his large storms, though recognizing it in very small disturbances. He seems to suggest that the lightness of the warm moist air in the neigborhood of a storm would cause it to rise up and overflow, thereby producing lower pressure in the central region that ought to be annulled by the inflowing winds. Similar ideas have been very widely disseminated ever since in popular text-books. Espy, in his lectures on storms between 1825 and 1840, showed that if the ascent of light air caused the barometer to fall, on the other hand the formation of rain would cause an evolution of latent heat that would warm up and expand the air more than enough to make up for the loss of the vapor, and might thus retard or annul any fall of pressure at the earth's surface. Dove, in 1828, showed that the winds and direction of rotation of a whirlwind must in some way depend on the diurnal rotation of the earth on its axis; by considering storms as whirlwinds he might have concluded that the fall of the barometer at the center is due to the whirling action, but this was first clearly expressed, not by him, but by Redfield, between 1821 and 1831. In the latter year Prof. E. Mitchell, of North Carolina, published his conclusions that *all* the phenomena of storms are the result of a vortical gyration. In 1843, Mr. Charles Tracy gave a popular exposition of the action of the rotating earth upon the movement of the wind and the rotation of storms, and enunciated the general law of deflection of winds to the right, similar to that previously deduced analytically by Poisson in his treatise on the motion of projectiles; but still nothing was said about the barometric pressure. In 1854 and 1859, Ferrel gave a full expression to the law of deflection to the right and to the resulting influence on the barometer, correcting the imperfect view known as Hadley's. It was Ferrel that first demonstrated that the diminution of pressure in a storm is directly due to the combined action of two centrifugal influences and has little or nothing to do with the rainfall, temperature, moisture, or the density of the air, except as these conspire to initiate or maintain the motion. These two centrifugal influences may be described as follows: (*a*) The whirling of the wind around a central vortex is accompanied by a tendency to fly outward, which is called centrifugal force, although this is, strictly speaking, not a special force but only an expression for the resistance that the inertia of a moving body offers when forced to move in a circle instead of a straight line. (*b*) Every particle of atmosphere revolves daily in a circle known in geography as a small circle of latitude; this motion gives rise to a centrifugal force. If the particle moves so as to change its latitude and longitude and comes into regions where the earth is moving slower or faster than on its original circle of latitude, its motions bring into play centrifugal forces that produce the so-called "deflection to the right."

Both of these manifestations of centrifugal force combine

together in cyclonic storms to produce a low pressure in the central region. The storm rotation is most important in very small whirls; the earth's rotation is most important in large whirls. *The observed fall of the barometer is the result of the motion of the air.* To be sure, the air would not move at all unless there was a slight deficiency or excess of pressure in some region to keep the air in motion; but this is a very slight matter, scarcely the thousandth part of the excess or deficiency observed in our high and low areas. The air is so mobile and light that a very minute barometric gradient produces a wind directly in the line of the gradient; this wind calls out the action of the centrifugal forces, and these produce the observed storm gradient which is almost perpendicular to the direction of the wind. The barometer falls as a vortex approaches and, therefore, shows the presence of high winds—not necessarily rain.

In our local thunderstorms there is generally very little rotation around a vertical axis and, therefore, no special fall in the barometer. If a rotation should ever take place around a horizontal axis, or one nearly so, as in rolling gusts of wind, the depression at the center of the whirl would be so far above the ground that the observer would not notice it.

With regard to high barometric pressure we note that the motions of the atmosphere give rise to high pressures on the right-hand side of the direction of movement just as truly as they give rise to low pressures on the left-hand side in storms of any extent and thus contribute to the formation of "high areas." Masses of cold or dry air descending through a lighter atmosphere to the ground raise the pressure a little as soon as the descent ceases. The almost explosive rapidity with which thunderheads are sometimes formed is a sudden expansion that may produce a temporary high pressure or waves of high and low pressure at the ground. Local storms are frequently formed in regions where the dense air of a high area is pushing under and lifting up the lighter air of the low area so that the barometric pressure is rising every moment, but in a rather irregular way, as shown by the continuous curves of the barograph. In general, the areas of high and low pressure are alike the result of a complex system of motions.

DRY NORTHER IN NEVADA.

The Monthly Review of the Nevada State Weather Service gives an account of the dry northers that prevailed in that State during May:

> The heavy wind of the 28th was very destructive to all vegetation, while whipping off the green fruit. The frosts and cold winds from the 27th to the 31st blasted the early fruits; the wild flowers disappeared entirely from the mountains and valleys. The frost of the 30th did a great deal of damage. The snow and wind storm beginning on the 26th almost destroyed the fruit at the northern end of the Washoe Valley. On the 25th and 26th we had the most severe windstorm for twenty-five years.

THE GREEN COLORED SUN OF SEPTEMBER 9–10, 1883.

The May Bulletin of the New England Weather Service gives a summary of earthquake phenomena at Manilla, and in this connection mentions the green sun that was observed on the 9th and 10th of September, 1883, a few weeks after the great irruption of the volcano at Krakatoa, in the Straits of Sunda. Similar strangely-colored suns were indeed observed at that time in other parts of the world, and have been observed on many other occasions. The Editor of this REVIEW had an excellent observation of a pale green sun in the damp atmosphere of Cape Ledo, on the west coast of Africa, through a rather thick cirrus cloud. The explanation of this phenomena has been made remarkably clear by the researches of Professor Barus, as published in Bulletin No. XI of the Weather Bureau. It appears that when the moisture begins to condense into cloud, the minute globules grow in size from microscopic invisibility up to the globules of fog. When these are all of some one uniform size the sunlight that penetrates them is analyzed into its elementary colors, as in the spectrum, and the visible color of the sun, as seen by us, depends upon the diameter of these globules, so that the color of the sun tells us of the size of the drops. These colors usually occur only when the globules are very small; that is to say, in the early stages of cloudy condensation, and the phenomenon is very closely allied to the colors shown by the soap bubble and known as the colors of thin plates.

THE TORNADOES OF MAY 3, 1895.

The accompanying chart, No. VIII, presents the general meteorological conditions prevailing at the time of occurrence of tornadoes in Iowa and neighboring States on May 3; the locations of the tornadoes and thunderstorms are shown by the short red lines. In addition to the main chart a number of others showing the changes that took place between 8 a. m. and 8 p. m. were constructed for study.

The principal local storms are numbered on this chart as follows:

1.—Between 3.45 and 4.20 p. m. in Spink County, S. Dak.
2.—Cain Creek, S. Dak.
3.—Near Tyndall, S. Dak., between 3 and 4 p. m.
4.—Near Sioux Falls, S. Dak., about 3 p. m.
5.—In Sioux and Osceola counties, Iowa, between 3 and 3.45 p. m.
6.—Baker Township, Osceola County, at 4.15 p. m.
7.—Ocheyedan, Osceola County, at 3.30 p. m.
8.—Alta, Iowa, sudden shift of wind to southeast at 3 p. m., and thunderstorms at 4 and 6.10 p. m.
9.—La Crosse, Wis., heavy hail between 3.36 and 3.45 p. m.
10.—Langdon, in the northwest corner of Missouri, and College Spring, in the southwest corner of Iowa; heavy hailstorm.
11.—Creston, Iowa, 7.30 p. m.
12.—Marshalltown, Marshall Co., Iowa; heavy thunder.
13.—Des Moines and St. Charles; tornado about 9 p. m., but may have been a straight-line blow; Steamboat Rock, 9.30 p. m., length of path, 3 miles. Madrid, Iowa, terrific wind and hail in all this part of the State, during the evening.
14.—Mound Ridge, McPherson Co., Kans.; path 25 miles long.
15.—Leavenworth, Kans., whirlwind at 6 p. m., 2 miles south of the town; path 1 mile long.
16.—St. Joseph, Mo., at 6.30 p. m., destructive straight-line blow from south-southwest.
17.—Clinton, Iowa, thunderstorm and hail during the night.
18.—Jacksonville, Ill., destructive winds, hail, and rain—almost a tornado in the afternoon.

On Friday, May 3, an area of low pressure (No. I of the series for this month) was central in the northern part of South Dakota, having moved southeastward to this point. It now turned northeastward slowly and disappeared in Manitoba on the 4th.

The central depression was accompanied as usual by a rapid extension southward of the region of falling barometer, so that the isobar of 29.7, for instance, extended from central Texas northward beyond the limits of our reports, while its east and west extension, reached from Wyoming to Wisconsin. Within this long oval the west and northwest winds on the west side were sharply divided from the south and east winds on the east side. So far as our reports show, the dividing line between these winds corresponded closely to the dividing line between the lower cloud movements. This dividing line is traced on Chart VIII for both 8 a. m. and 8 p. m. In the region immediately east of the evening position of the dividing line where all the severe tornadoes and thunderstorms occurred after 3 or 4 p. m., neither the winds nor the lower clouds give any evidence of important changes in their direction between 8 a. m. and 8 p. m., therefore it is evident that any unstable condition of the atmosphere, such as might contribute to a tornado, was not pro-

duced by the flowing of cold or dry air from the extreme west over the lower layer of air near the surface of the ground.

The study of the maps of relative humidity leads to the same conclusions, namely, that the lower air which was dry on the western side of this dividing line, although it advanced with that line eastward, yet did not in the least rise up and get ahead of it in order to descend in the region where thunderstorms and tornadoes occurred.

The proper study of the isobars requires that we should distinguish the effect of the weight of the air on the barometer from the effect of the motions of the atmosphere on its elastic pressure. An increase or diminution in the mass of the atmosphere over any point will, of course, increase or decrease its weight and, therefore, the barometric pressure. Now, the weather chart shows that between a. m. and p. m. the pressure fell over all that region within which the northwest winds supplanted the southerly winds, namely, the region over which the dividing line between northwest and southeast winds passed between a. m. and p. m. Of course the pressure also fell over a much larger region, but the fact that it fell over this region at all suffices to show that although the inflow of the northwest winds added to the mass of air above the stations of this region, yet this did not suffice to counteract the fall of pressure due to some other cause, which cause we must now recognize as the dynamic action of the wind.

In whatever direction the wind blows it is deflected to the right as a result of its rotation with the earth, and there is, therefore, an increased pressure of the moving wind against the quieter air on the right side, and a diminished pressure against the quieter air on the left-hand side, therefore, an area of low pressure forms on the left-hand side of the wind. All straight-line winds, as well as all the whirlwinds in the Northern Hemisphere, have the lowest pressures on the left-hand side. When parallel and adjacent belts of territory are covered by northerly and southerly or northwest and southeast winds, respectively, as in the present case, the dividing line between these two systems of winds becomes the axis of a trough of low pressure. An increase in the velocity of the wind produces on its left side a fall in the barometer by reason of the increased deflection to the right. An increase in the wind will arise whenever any excess of the static barometric pressure is converted into motion, hence, a falling barometer in its rear is the first result of the starting up of wind, and a falling barometer on its left-hand side is the second result. This latter is what causes the larger barometric gradients ordinarily observed. On the 3d of May there was a very general increase in the force of the wind between the a. m. and p. m. observations; for stations near the above-described dividing line the northwest winds generally rose from light winds up to 20 miles, and the west winds from 8 up to 18 and 28. On the east side of the dividing line the south winds rose from 12 and 16 to 14 and 28, and southeast winds from 10 and 12 to 28 and 52 at the maximum.

If we follow the line joining the points where the barometer fell 0.20 inch between the a. m. and p. m. observations and pick out, by interpolation, the rise in the velocity of the wind, irrespective of direction, we find an average of 24 miles per hour increase in the velocity. Similarly, the line of 0.10 fall in the barometer gives an average rise in the velocity of the wind of 11 miles per hour. The line of no fall in the barometer may be divided into an eastern and western branch. The former shows a small average increase in the velocity of the wind, while the latter branch, which skirts along the Rocky Mountain ridge, shows an average rise of 14 miles in the wind velocity. In passing to the western extreme we have, therefore, reached the region where the dynamic effect of the increase in the velocity of the wind is overcome by the direct effect of the increase in the weight of the mass of atmosphere.

Every storm region may be thus divided into three regions: (*a*) the central region in which the barometer falls as a consequence of the rapid movement of the wind; (*b*) an exterior region, usually on the west side, where the barometer rises by reason of an increase in the mass of air above it; (*c*) an intermediate region where the effect of changes in the wind and changes in the mass of air approximately counterbalance each other.

As the tornadoes and thunderstorms occurred within the region of southerly winds and cloud movements long before any inflow of air had taken place from the west, even in the middle levels of the atmosphere, and as they occurred at very irregular hours as compared with the regular advance of the isobars, we are compelled to seek their origin not in any general conditions, but in combinations of favorable local circumstances.

When a mass of air that is heavier than its neighbor, by reason of greater dryness or slightly lower temperature, sinks to the ground it must slide, as it were, on an inclined plane, at the same time pushing the lower air away. In proportion as the mass descends more nearly vertically and rapidly it is liable to become a warm fœhn wind, but in proportion as it descends slowly and more nearly horizontally the warming effect of compression is less noticeable. In the latter case the descending mass rolls over on itself and spreads over the ground. The minor whirls that are formed on its south or right-hand side are soon broken up, while those that form on its north or left-hand side are far more persistent and constitute the ordinary severe local storm and tornado. The severity of these local storms depends not upon the speed of the descending current, but upon the conditions as to moisture within the cloud that is formed by the rising air in advance of it. This cloud can not be due, to any great extent, to a process of mixture of warm and cold air, nor to a process of radiation, but, so far as known, must be formed by the cooling due to the expansion of the rising air. In most cases such cooling goes on gradually, and small cumulus clouds are thus formed, that may be dissipated either by the sun's heat or by the stoppage of the supply of ascending moist air. But occasionally the air within the cloud comes into a condition of supersaturation, and when this is relieved a violent expansion upward takes place; the cloud grows very rapidly; a powerful upward suction sets in toward it; the inflowing air acquires a violent whirl; the barometer within this whirl falls rapidly, owing to the centrifugal action of the whirlwind; the inflowing air, expanding and cooling as it enters the low pressure within the whirl, forms the central tornado funnel; much of the vapor is carried up high enough to form the snow and hail that descends some distance to the right and left of the path of the tornado.

The local influences that determine the special formation of large cumulus clouds and their development into tornadoes within the general current of southerly winds can be indicated, in a general way, as follows:

1. The air must be pushed upward either by its intrinsic lightness—that is to say, the heaviness of surrounding air—or by the presence of obstacles, such as hills and forests, or by the coming together of two currents from slightly different directions, crowding and pushing each other up.

2. The air must be moist enough to easily form cloud and there must be an abundance of dust or other nuclei on which to begin the cloudy condensation. If these conditions are fulfilled at a dew-point above 60° F., there will generally be sufficient moisture to bring on that supersaturated condition that seems to be necessary for violent action, which action may be manifested as lightning or rain or hail or wind.

The straight-line winds, tornadoes, thunderstorms, and hailstorms of May 3 illustrate each successive phase of the general process above outlined.

METEOROLOGICAL TABLES.

[*Prepared by the Division of Records and Meteorological Data.*]

Table I gives, for about 130 Weather Bureau stations making two observations daily and for about 20 others making only the 8 p. m. observation, the data ordinarily needed for climatological studies, viz, the monthly mean pressure, the monthly means and extremes of temperature, the average conditions as to moisture, cloudiness, movement of the wind, and the departures from normals in the case of pressure, temperature, and precipitation.

Table II gives, for about 2,400 stations occupied by voluntary observers, the extreme maximum and minimum temperatures, the mean temperature deduced from the average of all the daily maxima and minima, or other readings, as indicated by the numeral following the name of the station; the total monthly precipitation, and the total depth in inches of any snow that may have fallen. When the spaces in the snow column are left blank it indicates that no snow has fallen, but when it is possible that there may have been snow of which no record has been made, that fact is indicated by leaders, thus (. . . .).

Table III gives, for about 30 Canadian stations, the mean pressure, mean temperature, total precipitation, prevailing wind, and the respective departures from normal values. Reports from Newfoundland and Bermuda are included in this table for convenience of tabulation.

Table IV gives, for 82 stations, the mean hourly temperatures deduced from thermographs of the well-known pattern manufactured by Richard Bros., Paris, described and figured in the Report of the Chief of the Weather Bureau, 1891–'92, p. 29.

Table V gives, for 67 stations, the mean hourly pressures as automatically registered by barographs of the pattern manufactured by Richard Bros., Paris, except for Washington, D. C., where Foreman's barograph is in use. Both instruments are described in the Report of the Chief of the Weather Bureau, 1891–'92, pp. 26 and 30.

Table VI gives, for 136 stations, the arithmetical means of the hourly movements of the wind ending with the respective hours, as registered automatically by the Robinson anemometer, in conjunction with an electrical recording mechanism, described and illustrated in the Report of the Chief of the Weather Bureau, 1891–'92, p. 19.

Table VII gives the danger points, the highest, lowest, and mean stages of water in the rivers at cities and towns on the principal rivers; also the distance of the station from the river mouth along the river channel.

Table VIII gives the maximum, minimum, and mean readings of the wet-bulb thermometer for 135 stations, as determined by observations of the whirled psychrometer at 8 a. m. and 8 p. m., daily.

The difference between mean local time and seventy-fifth meridian time is also given in the table.

Table IX gives, for 133 stations, or all that make observations at 8 a. m. and 8 p. m., the four component directions and the resultant directions based on these two observations only and without considering the velocity of the wind. The total movement for the whole month, as read from the dial of the Robinson anemometer, is given for each station in Table I. By adding the four components for the stations comprised in any geographical division one may obtain the average resultant direction for that division.

Table X gives the total number of stations in each State from which meteorological reports of any kind have been received, and the number of such stations reporting thunderstorms (T) and auroras (A) on each day of the current month.

Table XI gives, for 42 stations, the percentages of hourly sunshine as derived from the automatic records made by two essentially different types of instruments, designated, respectively, the thermometric recorder and the photographic recorder. The kind of instrument used at each station is indicated in the table by the letter T or P in the column following the name of the station.

Table XII gives the records of hourly precipitation as reported by stations equipped with automatic gauges, of which 37 are known as float gauges and 7 as weighing rain and snow gauges.

Table XIII gives the record of excessive precipitation at all stations from which reports are received.

Table XIV gives a record of the heaviest rainfalls for periods of five and ten minutes and one hour, as reported by regular stations of the Weather Bureau furnished with self-registering rain gauges.

Additional information concerning the tables will be found in the January, 1895, REVIEW.

TABLE I.—*Climatological data for Weather Bureau Stations, May, 1895.*

Stations.	Elevation above sea-level, feet.	Length of record, years.	Pressure in inches.			Temperature of the air, in degrees Fahrenheit.								Humidity and precipitation.				Wind.				Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Monthly temperature data since opening station.			
			Mean pressure, 8 a. m. and 8 p. m. +2.	Mean reduced.	Departure from normal.	Mean max. and min. +2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Precipitation, in inches.	Departure from normal.	Days with .01, or more.	Total movement, miles.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date.				Absolute maximum.	Year.	Absolute minimum.	Year.
New England.						55.3 + 1.4											3.29 − 0.1													
Eastport	76	23	29.92	30.01	+ .05	48.3	+ 1.2	83	10	56	32	2	41	40	41	79	1.29	− 2.9	10	7,104	s.	48	ne.	15	2	22	7	6.4	83	1895	29	1882
Portland, Me	103	24	29.89	29.99	+ .02	54.6	+ 1.1	87	8	63	34	2	46	29	50	84	1.59	− 1.7	9	5,639	s.	30	s.	25	7	13	11	6.1	94	1880	32	*
Northfield	872	9	29.09	30.02	+ .05	56.8	+ 4.1	90	30	69	25	14	45	40	45	66	3.38	+ 0.6	8	6,702	s.	37	s.	19	10	12	9	5.3	90	*	34	1892
Boston	125	25	29.91	30.04	+ .06	60.2	+ 4.0	90	31	70	36	2	50	39	46	65	2.71	− 0.9	8	7,988	sw.	31	ne.	1	9	10	12	5.4	97	1880	31	1882
Nantucket	14	9	30.06	30.06	+ .08	53.8	+ 1.8	86	31	60	38	2	48	32	48	86	4.92	+ 1.6	10	7,276	nw.	34	se.	1	13	7	11	5.4	86	1895	36	1890
Woods Holl	.....	18	.....	.....	.....	53.2	− 1.2	79	31	59	34	2	47	24	.....	.....	3.44	+ 0.3	8	9,442	s.	40	sw.	12	13	8	10	4.7	79	*	34	*
Vineyard Haven	.....	9	.....	.....	.....	58.6	+ 2.1	90	31	68	40	14	50	31	.....	.....	4.23	+ 1.2	13	.....	sw.	.....	.....	.....	8	10	13	.....	90	1895	26	1888
Block Island	27	15	30.04	30.07	+ .07	52.6	+ 0.3	82	31	58	39	14	47	31	48	88	4.08	+ 0.3	11	10,163	sw.	36	ne.	1	8	14	9	5.5	82	1895	35	1888
Narragansett Pier	.....	14	.....	.....	.....	55.4	+ 0.8	91	31	64	34	2	46	32	.....	.....	4.58	+ 0.9	9	.....	sw.	.....	.....	.....	17	5	9	.....	91	1895	28	1891
New Haven	107	23	29.94	30.06	+ .06	58.6	+ 2.0	92	31	68	35	14	49	31	48	71	1.70	− 1.8	11	6,244	s.	31	se.	1	15	11	5	4.0	92	1895	30	1882
New London	45	25	30.04	30.09	+ .08	56.3	+ 0.1	93	31	65	34	2	48	35	50	83	4.32	+ 0.8	10	5,148	sw.	30	e.	1	9	17	5	5.4	93	1895	31	1891
Mid. Atlan. States.						62.0 − 0.5											3.59 − 0.1													
Albany	85	22	29.95	30.04	+ .06	61.6	+ 2.3	92	31	72	36	14	51	32	49	67	1.72	− 1.3	8	6,284	s.	34	se.	19	16	8	7	4.2	92	*	27	1878
New York	314	25	29.74	30.07	+ .07	59.4	− 0.1	95	31	68	38	13	51	30	49	73	2.04	− 1.0	8	9,012	w.	42	nw.	12	12	12	7	5.0	95	1895	34	*
Harrisburg	377	7	29.68	30.08	+ .10	61.8	+ 1.6	95	30	71	37	17	52	35	52	73	1.98	− 3.1	11	5,131	w.	28	nw.	12	12	9	10	5.2	95	1895	36	1891
Philadelphia	117	25	29.96	30.08	+ .06	62.4	+ 0.1	94	30	72	40	13	53	29	50	70	1.72	− 1.2	9	7,174	nw.	36	e.	1	8	17	6	5.6	96	1880	36	*
New Brunswick	.....	9	.....	.....	.....	61.2	+ 1.0	96	31	74	33	17	49	40	.....	.....	2.72	− 1.1	9	.....	sw.	.....	.....	.....	6	17	8	.....	96	1895	33	1895
Baltimore	179	25	29.88	30.07	+ .05	62.4	− 1.5	95	31	71	40	13	54	31	50	68	3.04	− 0.5	13	5,435	se.	26	nw.	27	8	19	4	5.2	95	*	34	1876
Washington	112	25	29.97	30.09	+ .06	62.6	− 1.0	95	30	72	40	13	53	34	52	73	3.09	− 0.8	17	4,966	s.	30	n.	12	9	13	9	4.9	96	*	34	1876
Cape Henry	.....	22	.....	.....	.....	61.6	− 3.2	94	30	69	44	23	54	31	.....	.....	5.93	+ 2.0	14	.....	se.	.....	.....	.....	9	12	10	.....	97	1889	41	1876
Lynchburg	685	24	29.36	30.10	+ .09	63.3	− 2.4	97	31	74	38	17	53	38	54	77	5.02	+ 1.3	19	2,777	ne.	22	nw.	14	8	16	7	5.5	97	1895	34	1891
Norfolk	57	25	30.02	30.09	+ .07	64.0	− 1.7	96	31	72	44	15	56	30	57	85	8.60	+ 4.6	14	5,747	ne.	30	nw.	14	17	9	5	3.8	98	1880	38	1876
S. Atlantic States.						68.0 − 2.5											3.99 − 0.2													
Charlotte	773	17	29.27	30.08	+ .06	65.6	− 2.9	97	31	76	41	15	56	29	53	71	4.05	− 0.4	13	4,419	sw.	28	sw.	13	13	12	6	4.5	97	1895	38	1889
Hatteras	11	15	30.08	30.09	+ .06	65.6	− 0.9	86	31	71	51	15	61	16	60	84	7.61	+ 3.3	15	9,701	n.	40	n.	22	6	15	10	5.8	88	1881	47	1882
Kittyhawk	9	21	30.04	30.05	+ .02	62.1	− 3.7	91	30	68	45	23	56	27	56	85	3.16	− 0.6	16	9,838	ne.	50	ne.	22	12	7	12	5.5	94	1889	42	*
Raleigh	388	9	29.69	30.10	+ .08	65.0	− 2.5	98	31	75	41	15	55	30	56	77	3.46	− 2.2	16	3,899	sw.	27	n.	21	8	13	10	5.5	98	1895	38	1891
Wilmington	78	25	30.01	30.09	+ .07	67.8	− 2.2	96	31	75	47	15	60	28	60	84	4.37	0.0	10	5,912	s.	27	nw.	14	9	10	12	5.5	97	1889	38	1876
Charleston	52	24	30.06	30.11	+ .07	70.2	− 2.5	89	31	76	51	13	64	18	61	78	5.63	+ 1.6	10	6,043	sw.	30	e.	23	10	14	7	5.0	96	1889	45	1894
Columbia	.....	8	.....	.....	.....	69.2	− 2.8	98	31	80	43	13	58	34	.....	.....	3.80	− 0.4	11	.....	s.	.....	.....	.....	14	11	6	.....	100	1891	40	1894
Augusta	180	24	29.80	30.08	+ .08	69.0	− 3.8	94	31	79	44	15	59	32	57	72	3.34	− 0.1	13	4,054	se.	27	w.	26	14	10	7	4.5	100	1878	41	1894
Savannah	98	25	29.99	30.09	+ .05	71.2	− 2.3	93	31	80	52	13	63	28	63	81	2.20	− 0.7	12	5,232	se.	25	nw.	12	9	13	9	4.9	98	1878	44	1894
Jacksonville	43	24	30.08	30.08	+ .06	73.8	− 1.3	90	31	83	55	13	65	30	64	79	2.26	− 2.2	14	4,996	ne.	30	se.	17	10	13	8	5.2	98	1878	46	1894
Florida Peninsula.						77.1 + 0.2											3.98 − 0.9													
Jupiter	28	8	30.02	30.05	+ .03	76.5	+ 0.4	88	*	82	62	15	70	20	69	80	6.10	− 1.9	15	6,272	e.	25	se.	26	10	12	9	5.2	93	*	55	1894
Key West	22	25	30.02	30.04	+ .03	79.9	+ 0.1	88	28	84	67	3	76	18	71	74	1.41	− 2.1	7	6,071	e.	37	e.	3	14	14	3	4.1	93	1881	63	1877
Tampa	36	6	30.03	30.07	.....	77.2	+ 1.4	92	28	86	58	14	68	34	69	79	1.29	− 1.5	8	4,481	ne.	23	s.	9	9	19	3	4.9	93	1894	53	1894
Titusville	44	8	30.04	30.08	+ .04	74.8	− 0.9	90	26	82	58	14	68	22	68	80	7.10	+ 1.8	15	8,331	e.	44	nw.	24	11	19	1	4.3	92	1880	49	1894
East Gulf States.						71.4 − 1.6											5.53 + 1.2													
Atlanta	1,131	17	28.90	30.08	+ .03	67.6	− 1.8	90	31	76	43	13	58	29	56	72	3.99	+ 0.3	13	6,259	e.	35	nw.	11	15	8	8	4.7	91	*	39	1894
Pensacola	56	16	29.99	30.05	+ .03	73.0	− 1.1	86	31	79	54	13	67	19	67	82	6.28	+ 2.7	10	6,709	sw.	48	sw.	25	9	15	7	5.4	93	1881	47	*
Mobile	57	25	30.00	30.06	+ .05	72.5	− 1.6	87	31	80	51	13	65	23	65	83	5.50	+ 0.9	11	5,839	s.	28	n.	12	5	12	14	6.1	98	1878	46	1889
Montgomery	221	23	29.83	30.06	+ .04	70.8	− 2.5	94	31	80	48	13	61	31	61	77	1.80	− 2.4	17	4,247	ne.	24	sw.	20	8	11	12	5.9	98	1875	44	1889
Meridian	358	6	29.66	30.05	+ .04	69.8	− 0.6	92	31	80	42	13	60	35	61	79	5.46	− 0.5	10	4,036	ne.	30	sw.	7	8	13	10	5.4	92	*	41	*
Vicksburg	254	24	29.74	30.01	+ .01	70.3	− 2.7	90	31	79	49	18	62	29	60	74	3.02	− 1.9	11	5,077	se.	46	nw.	1	13	12	6	4.5	95	1877	46	1877
New Orleans	54	25	30.00	30.06	+ .07	73.9	− 1.2	87	29	81	58	12	67	23	66	79	7.95	+ 2.6	12	6,174	se.	34	ne.	12	10	16	5	4.5	92	1877	53	1891
Port Eads	.....	9	.....	.....	.....	73.6	− 1.0	81	*	78	59	13	69	11	.....	.....	10.27	+ 7.5	7	.....	se.	.....	.....	.....	3	19	9	.....	90	1881	.....	.....
West Gulf States.						70.9 − 2.3											5.90 + 1.4													
Shreveport	249	24	29.73	29.99	+ .01	70.2	− 4.1	88	30	80	49	18	61	29	62	80	5.97	+ 1.5	15	5,571	se.	41	w.	5	7	9	15	6.6	101	1886	46	1892
Fort Smith	481	13	29.49	30.00	+ .06	67.8	− 1.5	91	9	79	42	18	56	35	57	69	3.74	− 0.7	13	5,377	e.	36	w.	15	9	11	11	5.4	98	1886	40	*
Little Rock	302	16	29.60	30.01	+ .03	68.6	− 1.7	88	31	78	46	18	59	31	57	70	2.85	− 2.6	10	5,516	se.	32	w.	4	5	17	8	5.9	95	1886	44	*
Corpus Christi	20	9	29.93	29.95	− .02	74.3	− 1.4	85	26	78	58	13	70	17	70	86	5.57	+ 2.1	9	10,538	se.	47	se.	4	0	16	15	7.2	96	1887	54	1888
Galveston	42	25	29.96	30.00	+ .02	73.2	− 2.8	92	26	78	61	18	69	14	67	82	5.13	+ 0.8	10	8,514	se.	42	e.	22	15	8	8	4.2	91	*	54	*
Palestine	510	14	29.46	30.00	+ .01	69.4	− 2.6	88	9	79	50	18	60	29	61	80	11.38	+ 5.0	15	5,027	s.	32	s.	29	7	10	14	6.1	92	1887	43	1892
San Antonio	679	18	29.25	29.93	.00	72.8	− 2.2	90	2	82	49	12	64	32	61	72	6.66	+ 3.4	11	4,986	e.	36	n.	16	2	21	8	6.2	104	1879	46	1889
Ohio Val. & Tenn.						64.4 − 0.8											2.45 − 1.4													
Chattanooga	762	17	29.30	30.10	+ .08	65.4	− 2.9	93	31	76	41	13	55	38	55	74	3.52	− 0.8	9	4,199	s.	49	w.	13	11	7	13	5.5	93	*	40	*
Knoxville	980	25	29.06	30.10	+ .07	64.1	− 2.1	92	31	74	38	15	54	34	55	78	5.63	+ 1.8	15	2,981	ne.	24	w.	13	12	8	11	4.9	94	1877	34	1894
Memphis	330	25	29.70	30.05	+ .06	69.1	− 0.9	94	31	79	47	18	59	31	56	67	0.46	− 3.8	7	5,794	se.	35	nw.	15	13	13	5	4.2	96	1879	41	1883
Nashville	545	25	29.48	30.06	+ .07	65.5	− 2.5	93	31	76	40	14	55	32	53	69	2.05	− 1.6	12	4,742	s.	36	nw.	13	12	7	12	5.0	93	*	37	1888
Lexington	989	12	29.02	30.06	+ .09	62.3	− 1.1	91	31	72	33	14	52	35	49	66	4.05	+ 1.0	11	7,114	s.	48	w.	13	4	13	14	6.5	91	1895	32	1894
Louisville	525	24	29.50	30.06	+ .07	65.4	− 0.7	94	31	76	36	14	55	38	50	62	2.88	− 0.9	12	5,088	s.	38	sw.	13	12	11	8	5.0	94	1895	36	*
Indianapolis	766	25	29.24	30.06	+ .06	63.8	+ 0.9	96	31	74	33	14	53	34	49	62	1.07	− 3.1	11	4,866	s.	30	nw.	13	11	14	6	4.7	96	1895	31	1877
Cincinnati	628	25	29.40	30.07	+ .08	63.6	− 0.9	92	31	73	36	14	54	33	48	60	1.82	− 1.7	9	4,767	se.	29	w.	2	13	13	5	4.5	94	1875	35	1883
Columbus	824	17	29.19	30.06	+ .07	62.8	+ 1.1	96	31	74	35	*	52	37	47	60	1.73	− 3.0	8	4,816	sw.	25	nw.	11	11	14	6	5.1	96	1895	34	*
Pittsburg	842	25	29.18	30.07	+ .07	63.2	+ 0.8	93	30	74	35	22	53	34	49	63	1.97	− 1.4	10	4,564	s.	27	s.	13	8	13	10	5.4	95	1887	27	1876
Parkersburg	638	7	29.41	30.09	+ .09	62.8	− 0.7	94	*	75	32	13	50	39	50	63	2.22	− 1.7	12	3,812	e.	35	sw.	11	11	6	14	5.6	94	1895	32	*
Lower Lake Region.						59.1 + 2.6											25.3 − 0.7													
Buffalo	690	25	29.30	30.04	+ .06	56.2	+ 2.5	88	5	64	30	13	48	27	45	67	2.19	− 1.0	9	6,851	w.	36	w.	7	14	12	5	4.6	89	1880	28	1891
Oswego	335	25	29.64	30.01	+ .02	57.0	+ 3.2	88	6	65	34	22	49	28	47	71	3.25	+ 0.6	9	6,800	w.	30	s.	19	14	11	6	4.1	94	1879	28	1885
Rochester	523	25	29.48	30.04	+ .06	60.5	+ 5.0	93	30	70	31	21	51	33	46	61	3.44	+ 0.4	9	5,692	sw.	28	sw.	23	14	11	6	4.2	93	1895	28	1880
Erie	714	22	29.38	30.04	+ .06	58.8	+ 3.1	85	31	67	32	13	51	36	48	69	2.58	− 0.9	9	7,277	sw.	27	s.	3	12	13	6	4.8	91	1879	31	1885
Cleveland	740	25	29.36	30.04	+ .04	59.4	+ 2.7	89	31	69	32	21	50	40	47	64	1.84	− 1.5	10	8,686	se.	45	sw.	11	15	8	8	4.2	92	1879	28	1876
Sandusky	629	17	29.37	30.04	+ .04	60.5	+ 2.0	93	29	70	35	13	51	39	49	68	2.00	− 1.5	9	6,161	s.	38	nw.	11	7	15	9	5.5	93	1895	34	*
Toledo	674	25	29.32	30.03	+ .05	60.8	+ 2.1	93	31	70	34	12	51	37	48	65	2.30	− 1.1	9	7,018	sw.	37	s.	18	13	9	9	4.9	95	1871	30	1876
Detroit	734	25	29.25	30.02	+ .03	59.6	+ 2.0	95	31	70	33	12	50	31	47	66	2.61	− 0.8	11	7,544	sw.	43	sw.	18	17	5	9	4.0	95	1895	29	1891
Upper Lake Region.						55.0 − 3.7											3.16 − 0.1													
Alpena	609	23	29.34	30.00	+ .03	52.6	− 3.6	95	29	63	27	21	43	42	45	75	2.32	− 1.3	8	6,636	se.	33	nw.	11	7	16	8	5.7	95	1895	22	1883
Grand Haven	628	24	29.32	29.99	+ .03	55.8	− 1.9	87	30	66	29	20	46	37	46	69	2.55	− 0.9	11	7,573	sw.	37	sw.	4	12	15	4	4.4	87	1895	28	*
Marquette	734	24	29.16	29.95	− .03	53.3	− 5.3	88	29	63	28	*	43	39	42	71	4.88	+ 2.2	16	8,434	nw.	46	se.	28	6	11	14	6.5	98	1895	22	1888
Port Huron	639	21	29.34	30.03	+ .05	57.6	− 5.2	93	30	68	28	21	47	37	46	68	2.89	− 0.3	11	8,153	s.	38	ne.	14	13	8	10	4.5	93	1895	26	1892
Sault Ste. Marie	642	7	29.28	29.97	+ .03	52.5	− 5.5	89	29	63	27	12	42	35	42	73	3.17	+ 1.0	12	5,903	se.	27	sw.	5	11	12	8	5.3	89	1895	24	1890
Chicago	894	25	29.13	30.00	+ .03	59.2	− 2.9	94	31	68	32	14	50	40	46	64	1.99	− 1.8	10	12,903	s.	50	n.	13	15	14	2	3.8	94	1895	27	1875
Milwaukee	673	25	29.28	30.00	+ .02	55.7	− 2.3	92	29	65	31	14	46	45	44	69	4.34	+ 0.8	14	7,117	se.	42	n.	13	11	12	8	5.1	92	1895	25	1875
Green Bay	617	9	29.32	29.98	− .00	57.8	− 4.4	91	29	69	29	14	47	42	45	65	4.28	+ 1.3	14	7,096	s.	42	n.	13	5	14	12	6.5	91	1895	26	1891
Duluth	702	25	29.16	29.92	− .04	50.2	− 2.0	81	8	59	32	13	41	34	40	73	2.13	− 1.5	14	6,736	ne.	38	nw.	10	6	13	12	6.2	91	1874	25	1888
North Dakota.						54.5 − 1.1											2.90 + 0.6													
Moorhead	935	15	28.88	29.89	− .04	55.8	− 2.7	92	8	67	28	21	44	44	42	64	1.34	− 1.3	11	8,000	n.	61	se.	3	11	8	12	5.8	96	1887	14	1890
St. Vincent	794	15	29.06	29.88	− .05	54.2	− 2.3	81	8	67	23	11	41	43	41	66	3.46	+ 1.5	10	7,033	n.	36	s.	27	10	11	10	5.4	96	1887	14	1888
Bismarck	1,681	21	28.14	29.92	+ .03	54.6	+ 0.3	84	3	67	30	21	42	43	40	63	3.80	+ 1.2	10	7,534	n.	42	s.	27	9	14	8	5.5	93	1891	20	*
Williston	1,875	17	27.91	29.89	.00	53.4	− 0.9	78	7	64	28	20	42	40	34	54	3.02	+ 1.2	11	7,784	nw.	60	nw.	14	7	15	9	6.0	95	1880	17	1891
Upper Miss. Valley.						62.6 + 1.3											2.79 − 1.3													
Minneapolis	.....	6	.....	.....	.....	59.5	+ 4.6	92	28	70	31	13	49	30	.....	.....	2.90	− 1.0	16	.....	s.	.....	.....	.....	7	15	13	13	.....	92	1895	28	1891
St. Paul	850	25	29.08	29.93	.00	58.6	+ 1.4	92	28	69	31	13	49	29	45	64	2.89	− 0.4	16	6,314	se.	36	s.	3	5	13	13	6.3	94	1874	24	1875
La Crosse	720	23	29.19	29.96	+ .02	60.4	+ 2.4	92	*	71	30	14	50	31	49	71	4.04	+ 0.8	17	6,178	s.	30	n.	10	5	22	4	5.5	96	1874	29	1890
Davenport	613	24	29.32	29.97	.00	62.6	+ 2.2	90	9	73	34	14	52	32	47	62	2.28	− 2.2	9	7,607	sw.	45	sw.	3	8	17	6	5.1	90	*	29	1885
Des Moines	869	17	29.04	29.96	+ .02	62.7	+ 1.5	94	9	73	35	12	52	35	47	62	2.86	− 2.2	13	7,520	s.	50	sw.	3	8	10	13	5.8	94	*	28	1885

TABLE I.—*Climatological data for Weather Bureau Stations, May*, 1895—Continued.

Stations.	Elevation above sea-level, feet.	Length of record, years	Pressure, in inches.			Temperature of the air, in degrees Fahrenheit.								Humidity and precipitation.					Wind.								Monthly temperature data since opening station.			
			Mean pressure, 8 a.m. and 8 p.m. +2.	Mean reduced.	Departure from normal.	Mean max. and min. +2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Precipitation, in inches.	Departure from normal.	Days with .01, or more.	Total movement, miles.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date.	Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Absolute maximum.	Year.	Absolute minimum	Year.
Up. Miss. Val.—Con						62.1	+ 2.9	92	*	74	30	14	50	37	.....	.....	2.63	— 1.3	12	.....	se.	....	.....	...	14	10	7	....	94	1874	26	1885
Dubuque	.....	32	.....	.....	.....	63.6	+ 1.4	90	9	74	35	14	54	32	49	65	3.15	— 1.0	12	6,388	sw.	30	nw.	10	14	12	5	3.9	92	1874	29	1875
Keokuk	613	24	29.34	29.99	+ .04	66.4	— 0.7	91	29	75	40	14	58	25	54	68	1.48	— 2.4	6	6,325	s.	31	nw.	13	7	14	10	6.2	92	1874	37	1875
Cairo	359	24	29.64	30.03	+ .07	63.8	+ 1.4	92	31	74	34	14	53	31	49	63	2.55	— 2.7	9	7,879	s.	32	s.	28	12	17	2	3.7	92	1895	34	*
Springfield, Ill.	644	16	29.33	30.01	+ .02	63.4	.....	89	28	74	36	14	53	31	51	68	6.23	.....	13	7,805	sw.	40	s.	4	17	10	4	3.7	89	1895	36	*
Hannibal	534	....	29.42	29.99	.....	66.6	+ 0.6	94	31	76	40	14	57	31	51	62	3.16	— 1.0	8	8,768	s.	39	w.	5	14	12	5	4.1	94	1895	32	1875
St. Louis	571	25	29.43	30.04	+ .08	62.9	+ 1.9										2.94	— 1.6													
Missouri Valley.						64.8	+ 2.2	91	9	76	33	14	53	34	.....	.....	6.09	+ 0.3	17	5,694	se.	28	nw.	10	12	9	10	5.5	91	*	32	1891
Columbia	.....	6	.....	.....	.....	65.4	+ 0.9	90	9	76	39	17	55	32	51	65	3.88	— 0.4	11	7,802	s.	40	n.	10	9	16	6	4.8	90	*	36	1890
Kansas City	963	7	28.97	29.99	+ .05	63.4	— 3.8	86	9	73	40	12	54	29	52	69	3.54	— 2.8	12	8,478	s.	37	se.	31	12	13	6	4.3	90	1883	34	1888
Springfield, Mo	1,324	10	28.61	29.99	+ .03	66.6	+ 5.2	94	9	79	39	*	54	36	.....	.....	3.74	— 2.0	13	.....	s.	.....	.....	...	14	13	4	....	94	1895	30	*
Topeka	.....	8	.....	.....	.....	66.6	+ 5.2	94	9	79	39	*	54	36	.....	.....	3.74	— 2.0	13	.....	s.	.....	.....	...	14	13	4	....	94	1895	30	*
Omaha	1,123	24	28.76	29.94	— .01	64.2	+ 2.2	97	28	75	38	12	54	34	46	57	1.11	— 3.4	10	7,438	se.	36	s.	27	10	7	14	5.6	97	1895	28	1875
Sioux City	1,165	6	28.67	29.90	— .02	62.0	+ 4.3	95	28	73	31	21	50	36	44	57	2.15	— 1.5	12	9,241	s.	48	s.	28	7	14	10	5.7	95	1895	30	1890
Pierre §	1,470	21	28.33	29.88	— .01	59.6	+ 2.1	98	8	71	30	19	48	41	44	61	1.20	— 1.2	7	9,196	nw.	48	nw.	1	13	9	9	5.3	101	1874	15	1882
Huron	1,310	14	28.50	29.89	— .04	57.4	+ 1.9	94	8	71	24	30	44	44	42	60	1.83	— 1.6	12	11,349	se.	51	se.	.3	5	15	11	5.7	96	*	22	1880
Northern Slope.						53.4	— 0.5										1.71	— 0.7													
Havre	2,477	15	27.28	29.87	— .04	52.6	— 0.7	85	13	67	22	11	38	45	30	48	0.43	— 1.0	6	8,541	w.	37	nw.	14	11	18	2	4.7	95	1886	18	1885
Miles City	2,374	18	27.41	29.88	.....	54.8	— 1.6	82	*	67	32	19	42	43	38	58	1.59	— 0.7	7	5,813	nw.	33	w.	4	11	16	4	5.2	98	*	24	1892
Helena	4,108	16	25.79	29.97	+ .04	52.0	— 1.0	79	13	63	31	11	41	38	30	47	0.87	— 0.6	8	6,101	sw.	40	w.	23	12	11	8	5.0	89	1886	22	1885
Rapid City	3,260	11	26.55	29.90	— .03	54.2	+ 1.1	82	8	65	28	19	44	37	37	58	2.66	— 1.6	17	8,161	n.	36	w.	14	4	14	13	6.8	91	1894	20	1883
Cheyenne	6,105	25	23.97	29.92	.00	50.6	— 0.7	84	27	62	27	11	39	36	36	60	2.73	+ 0.6	11	8,312	nw.	36	w.	4	6	20	5	5.4	88	1874	20	1893
Lander ‡	5,377	13	24.59	29.93	+ .01	51.1	— 0.8	78	8	65	28	10	38	42	30	54	1.32	— 1.2	8	3,668	sw.	36	sw.	26	10	11	10	5.4	83	1893	20	*
North Platte	2,826	21	27.01	29.94	+ .02	58.4	— 0.1	97	27	71	32	11	45	48	40	57	2.38	— 0.6	5	9,284	se.	42	w.	9	10	17	4	4.5	97	1895	25	1880
Middle Slope.						62.5	+ 0.9										2.01	— 1.4													
Denver	5,287	24	24.70	29.93	+ .01	55.6	— 1.0	92	27	68	33	16	44	43	29	46	2.86	+ 0.1	11	6,052	nw.	37	nw.	6	10	16	5	4.9	92	*	27	*
Pueblo	4,734	7	25.21	29.91	.....	58.4	— 1.3	93	8	73	35	12	44	47	29	43	2.45	+ 1.2	9	6,903	nw.	54	n.	30	11	13	7	5.1	93	1895	24	1893
Concordia	1,410	11	28.45	29.92	— .03	66.2	+ 3.7	100	8	79	35	11	53	42	45	53	1.01	— 3.2	9	7,690	s.	42	s.	27	15	14	2	3.4	100	1895	30	1893
Dodge City	2,504	21	27.32	29.88	— .01	64.8	+ 1.4	99	27	78	35	11	51	43	40	47	0.97	— 2.6	5	10,894	s.	50	s.	28	13	15	3	3.9	99	1895	24	1893
Wichita	1,351	7	28.51	29.92	+ .02	67.4	+ 1.6	95	9	80	40	*	55	41	50	62	2.77	— 2.5	8	7,817	s.	39	n.	10	15	9	7	4.4	95	1895	34	1893
Oklahoma	1,239	....	28.67	29.96	.....	69.3	.....	98	*	81	41	12	58	35	56	68	1.34	.....	6	8,865	s.	48	n.	10	18	11	2	3.4	93	1895	38	1893
Southern Slope.						.....	.....										.....	.....													
Abilene	1,749	10	28.16	29.96	+ .04	70.0	— 1.8	90	15	80	44	12	60	31	53	63	1.96	— 2.4	7	8,080	se.	38	w.	1	10	7	14	5.2	105	1886	42	*
Amarillo	3,691	....	26.21	29.92	.....	63.6	.....	93	28	76	37	11	51	36	36	47	1.78	.....	7	15,410	s.	58	n.	10	10	11	10	5.3	93	1895	30	1893
Southern Plateau.						69.4	— 0.9										1.42	+ 1.1													
El Paso	3,767	17	26.12	29.87	+ .02	70.1	— 3.2	98	9	85	45	1	56	43	27	29	2.11	+ 1.8	3	9,751	nw.	62	nw.	29	20	10	1	2.6	105	1886	40	1884
Santa Fe	6,998	23	23.24	29.92	+ .01	54.6	— 1.7	81	8	65	31	30	44	29	22	39	3.46	+ 2.7	10	6,185	sw.	38	sw.	28	15	11	5	4.6	89	1872	24	1887
Tucson	2,390	12	27.40	29.82	— .01	73.8	— 0.2	101	7	90	48	4	58	42	30	25	0.10	0.0	1	4,346	se.	30	s.	28	18	12	1	3.5	106	1881	38	1892
Yuma	141	20	29.64	29.78	— .06	79.2	+ 1.4	109	8	95	54	29	64	43	41	33	0.00	0.0	0	5,922	sw.	39	nw.	28	27	4	0	1.4	110	1885	44	1887
Independence	3,950	....	25.92	29.85	.....	65.8	.....	89	7	79	37	38	52	37	20	21	0.01	.....	1	7,564	nw.	48	nw.	27	15	8	8	3.9	....	.....	.....	.....
Middle Plateau.						55.9	— 0.1										1.45	+ 0.2													
Carson City	4,720	8	25.26	29.98	.....	54.2	— 0.7	81	14	68	27	29	40	42	26	39	0.62	— 0.5	4	.....	sw.	.....	.....	...	25	2	4	2.9	88	1889	22	1894
Winnemucca	4,340	17	25.61	29.94	+ .01	55.6	+ 1.7	83	14	68	31	29	43	39	23	36	1.43	+ 0.6	6	8,779	sw.	68	sw.	26	12	10	9	4.6	96	1887	17	1887
Salt Lake City	4,345	22	25.57	29.93	.00	57.9	— 1.4	83	7	69	33	28	47	33	34	46	2.29	+ 0.5	10	5,513	nw.	36	s.	26	10	8	13	5.5	93	1887	30	1890
Northern Plateau.						54.0	— 2.0										1.74	+ 0.3													
Baker City	3,430	6	26.40	29.92	+ .01	51.4	— 1.7	80	18	64	28	22	39	41	35	60	1.25	— 0.6	10	4,542	nw.	28	sw.	4	10	7	14	5.6	85	1890	24	1891
Idaho Falls	4,742	6	25.19	29.95	.....	51.5	— 0.1	81	13	66	24	10	37	44	35	59	1.82	+ 1.0	10	6,309	s.	33	nw.	15	11	6	14	5.6	83	1894	22	1894
Spokane	1,930	15	27.94	29.97	+ .02	54.7	— 2.1	84	17	65	34	31	44	39	33	52	1.58	+ 0.3	11	5,609	s.	38	sw.	7	3	11	17	7.0	95	1887	29	1881
Walla Walla	1,018	10	28.91	29.98	+ .04	58.6	— 4.2	90	12	70	38	10	47	40	39	52	2.31	+ 0.4	10	5,094	s.	25	s.	21	10	15	6	5.1	99	1887	35	1894
N. Pac. Coast Reg.						53.2	— 1.1										5.96	+ 3.2													
East Clallam	.....	.....	.....	.....	.....	51.0	.....	83	15	60	35	*	42	42	.....	.....	7.97	.....	21	.....	sw.	.....	.....	...	9	3	19	.....	.....	.....	.....	.....
Fort Canby	179	12	29.82	30.02	.00	53.0	+ 0.4	84	15	58	41	8	48	25	46	84	8.19	+ 5.5	21	10,279	s.	66	s.	7	8	4	19	6.7	84	1895	38	1887
Neah Bay	.....	11	.....	.....	.....	51.9	— 1.5	81	15	61	35	10	43	34	.....	.....	10.77	+ 6.3	19	.....	sw.	.....	.....	...	8	5	18	....	81	1895	33	1894
Olympia	.....	18	.....	.....	.....	53.6	— 1.1	89	16	64	34	23	43	46	.....	.....	5.93	+ 3.5	19	.....	sw.	.....	.....	...	8	12	11	....	92	1894	30	*
Port Angeles	29	11	29.96	29.99	.00	50.4	— 0.2	75	16	57	35	8	44	29	42	76	1.55	+ 0.5	14	4,853	w.	38	w.	12	12	14	5	5.0	81	1894	30	1887
Port Crescent	.....	.....	.....	.....	.....	50.8	.....	85	26	62	33	5	40	43	.....	.....	4.34	.....	13	.....	w.	.....	.....	...	11	9	11	.....	.....	.....	.....	.....
Pysht	.....	.....	.....	.....	.....	51.5	.....	77	16	62	34	*	41	34	.....	.....	6.14	.....	22	.....	w.	.....	.....	...	7	8	16	.....	.....	.....	.....	.....
Seattle	119	....	29.86	29.99	.....	55.2	.....	87	16	63	41	9	47	35	42	68	3.20	.....	16	5,107	s.	24	w.	26	5	9	17	6.8	.....	.....	.....	.....
Tatoosh Island	86	12	29.90	30.00	— .01	50.2	— 0.3	78	15	54	41	8	46	27	44	82	7.12	+ 2.9	20	9,660	sw.	46	s.	6	8	4	19	7.0	78	1895	30	1890
Astoria	.....	11	.....	.....	.....	54.5	— 0.8	85	15	61	42	*	48	31	.....	.....	8.52	+ 5.3	20	.....	w.	.....	.....	...	8	8	15	....	86	1887	35	1886
Portland, Oreg	157	24	29.84	30.02	— .03	55.9	— 3.6	86	16	64	36	9	48	32	41	66	3.42	+ 0.9	18	7,700	nw.	38	sw.	26	7	12	12	6.0	99	1887	32	1894
Roseburg	523	18	29.44	30.00	— .06	55.8	— 1.9	89	15	66	32	9	46	41	44	72	2.14	+ 0.4	13	3,243	nw.	24	sw.	5	9	5	17	6.4	102	1887	30	1886
Mid. Pac. C'st Reg.						58.6	— 0.7										1.89	+ 0.3													
Eureka	64	9	30.02	30.08	+ .06	53.0	— 0.5	68	11	58	42	10	48	21	47	83	5.39	+ 2.4	13	6,788	nw.	36	nw.	9	10	12	9	5.0	78	1890	35	1887
Red Bluff	334	18	29.60	29.95	+ .01	66.2	— 0.7	98	13	78	47	28	54	36	44	54	1.65	+ 0.4	6	5,646	se.	36	se.	26	20	3	8	3.7	110	1887	37	1879
Sacramento	71	18	29.88	29.96	.00	63.6	— 1.2	94	12	74	46	20	53	33	48	64	0.51	— 0.3	4	7,876	sw.	44	nw.	9	18	11	2	2.6	98	*	39	*
San Francisco	153	25	29.86	30.02	+ .02	57.6	— 0.4	89	11	64	48	*	51	28	49	79	0.60	— 0.1	6	9,677	w.	36	w.	2	19	9	3	3.5	97	1887	44	1894
Point Reyes Light	.....	7	.....	.....	.....	52.4	+ 0.3	82	11	60	39	21	45	36	.....	.....	1.29	— 0.8	9	.....	nw.	.....	.....	...	13	5	13	....	82	*	36	1891
S. Pac. Coast Reg.						64.3	— 0.1										0.30	— 0.1													
Fresno	332	8	29.57	29.92	+ .02	67.4	— 0.8	98	12	82	45	21	53	40	41	49	0.52	+ 0.2	2	6,013	nw.	24	w.	30	23	3	5	2.5	104	1892	40	1894
Los Angeles	330	18	29.59	29.94	— .02	63.6	+ 0.4	88	5	74	47	4	53	35	52	76	0.19	— 0.2	4	2,958	w.	26	w.	29	9	19	3	4.4	100	1883	40	1883
San Diego	69	24	29.87	29.95	— .03	61.9	+ 0.1	80	6	67	51	30	56	24	53	77	0.19	— 0.2	2	4,318	w.	23	w.	28	14	11	6	4.6	94	1879	45	*
San Luis Obispo	234	....	29.75	30.00	.....	58.8	.....	90	10	70	40	31	48	33	47	75	0.47	.....	5	5,946	nw.	28	nw.	31	18	11	2	3.0	....	.....	.....	.....

NOTE.—The data at stations having no departures are not used in computing the district averages. Letters of the alphabet denote number of days missing from the record.

*Two or more directions, dates, or years. † Received too late to be considered in departures, etc. ‡ Normals of temperature and precipitation and extremes of temperature combined with Fort Washakie records. § Normals of temperature and precipitation and extremes of temperature combined with Fort Sully records.

TABLE II.—*Meteorological record of voluntary and other cooperating observers, May, 1895.*

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Alabama.	°	°	°	*Ins.*	*Ins.*
Alco	92	44	71.9	.....	.....
Ashville†	98	40	71.6	3.23	
Bermuda†	90	43	70.8	2.80	
Birmingham†	94[d]	55[d]	73.5[d]	3.93	
Brewton†	95	42	71.0	4.00	
Carrollton*†	87	46	69.1	2.00	
Citronelle†	87	53	73.2	2.99	
Claiborne Landing†	.....	.....	.....	2.10	
Clanton†	90	43	69.0	3.25	
Collirene*‡	84	52	71.3	1.45	
Cordova†	.....	.....	.....	3.48	
Daphne†	96	42	71.6	3.91	
Decatur†	94	39	65.5	7.56	
Demopolis†	.....	.....	.....	3.53	
Elba†	.....	.....	.....	4.44	
Eufaula *a*†	98	46	73.2	3.41	
Eufaula *c*†	.....	.....	.....	2.76	
Evergreen†	98	43	71.9	3.18	
Florence *a*†	.....	.....	.....	2.19	
Florence *b*†	91	42	67.5	2.50	
Fort Deposit†	93	46	71.9	6.43	
Gadsden†	91	42	68.4	5.24	
Greensboro†	90	46	69.6	3.94	
Healing Springs†	87	40	67.0	4.35	
Highland Home†	90	48	70.6	4.19	
Jasper†	96	37	67.4	2.15	
Livingston†	95	44	70.9	3.98	
Lock No. 4	.....	.....	.....	2.19	
Madison Station†	92	39	67.2	4.95	
Maple Grove†	96	39	68.2	4.59	
Marion†	93	45	71.4	2.07	
Mount Willing†	91	43	71.0	2.75	
Newbern†	89	50	70.6	3.77	
Newburg†	93	37	66.8	2.39	
Newton†	94	46	70.9	1.10	
Opelika†	94	50	70.8	4.16	
Oxanna*†	91	42	64.6	10.63	
Pine Apple†	95	38	69.3	5.26	
Pushmataha†	91	45	71.3	5.24	
Rock Mills†	90	41	68.3	3.11	
Scottsboro†	91	38	67.5	6.87	
Selma†	.....	.....	.....	3.62	
Starlington*†	95	55	69.8	6.37	
Stardevant†	.....	.....	.....	5.49	
Tallassee Falls†	.....	.....	.....	2.99	
Thomasville†	91	44	70.4	6.40	
Tuscaloosa†	94	44	70.7	4.81	
Tuscumbia†	94	43	69.2	1.86	
Union†	94	40	69.6	1.96	
Union Springs†	96	44	71.8	5.24	
Uniontown*†	91*	49	71.3	4.38	
Valley Head†	89	37	64.6	4.26	
Warrior†	.....	.....	.....	5.02	
Wetumpka	.....	.....	.....	4.34	
Wilsonville†	.....	.....	.....	2.42	
Alaska.					
Coal Harbor†	58	23	39.4	2.09	0.2
Holy Cross Mission	65	28	41.8	0.37	
Killisnoo†	64	32	45.6	1.70	
Yukon Delta*‡	52	0	33.0	.....	.....
Arizona.					
Antelope Valley†	.....	.....	.....	T.	
Benson *a***	98	49	74.3	1.00	
Bisbee†	94	46	69.4	0.23	
Buckeye†	104	42	74.6	0.00	
Calabasas†	98	40	70.0	0.06	
Casa Grande*§	105	63	81.5	0.00	
Dragoon†	.....	.....	.....	0.57	
Dragoon Summit*§	96	55	81.1	0.18	
Dudleyville†	106	44	71.2	0.12	
Eagle Pass*§	.....	50	67.3	0.45	
Farleys Camp†	101	44	74.1	0.35	
Flagstaff†	82	28	54.8	0.40	3.0
Fort Apache	90	34	60.1	1.00	
Fort Grant†	93	44	68.2	0.30	
Fort Huachuca	94	42	67.8	0.02	
Gila Bend*§	108	64	82.8	T.	
Holbrook†	93	37	62.4	0.31	
Keams Canyon†	95	30	57.2	0.44	T.
Maricopa*§	112	60	83.0	0.00	
Mount Huachuca†	94	45	68.6	0.10	
Natural Bridge†	.....	.....	.....	0.41	
Navajo*†§	.....	38	56.2	0.00	
Oracle†	98	48	71.4	0.38	
Oro	.....	.....	.....	0.71	
Oro Blanco	98	55	75.1	T.	
Pantano*§	90	55	71.7	0.05	
Parker†	112	40	74.7	0.00	
Peoria†	102	53	77.8	T.	
Pinal Ranch	.....	.....	.....	0.36	
Red Rock*†§	105	68	86.0	T.	
Reymert†	104	46	77.6	0.07	
San Carlos†	105	39	73.4	0.04	
San Simon*§	100	67	81.3	0.63	
Show Low	.....	.....	.....	0.53	
Signal†	103	48	76.2	0.26	
Sulphur Spring Valley†	.....	.....	.....	0.63	
Arizona—Cont'd.					
Texas Hill*§	111	65	86.0	0.00	
Tucson *c*†	102	47	74.7	0.09	
Walnut Ranch*†‡	91	40	64.2	0.52	
Whipple Barracks†	91	33	59.8	0.50	
Wilgus†	.....	.....	.....	0.79	
Willcox*§	91	51	73.9	0.77	
Arkansas.					
Arkadelphia†	.....	.....	.....	5.43	
Arkansas City†	.....	.....	.....	1.25	
Bee Branch†	.....	.....	.....	4.71	
Blanchard Springs†	91	40	69.4	3.04	
Brinkley†	94	44	70.1	3.30	
Camden *a*†	.....	.....	.....	5.40	
Camden *b*†	92	44	70.2	5.43	
Conway*‡	86	51	67.7	3.00	
Corning†	97	36	67.6	1.61	
Dallas†	89	42	68.0	7.23	
Dardanelle†	.....	.....	.....	3.70	
Elon†	.....	39	.....	2.74	
Fayetteville†	90	40	66.7	4.01	
Forrest†	92	41	68.8	2.60	
Fulton†	.....	.....	.....	5.16	
Gaines Landing†	.....	.....	.....	1.16	
Helena *a*†	.....	.....	.....	2.32	
Helena *b*†	95	44	71.6	1.80	
Hot Springs *a*	89	46	69.8	7.20	
Hot Springs *b*	.....	.....	.....	7.18	
Hot Springs (near)	.....	.....	.....	6.82	
Keesees Ferry†	92	37	67.2	3.28	
Kirby†	88	.....	.....	6.95	
La Crosse†	88	40	66.2	3.95	
Lonoke*‡	91	48	71.8	2.81	
Luna Landing*§	87	46	70.5	1.57	
Madding[2]	.....	.....	68.5	3.51	
Malvern†	94	42	70.1	5.33	
Mossville	83	43	64.6	5.73	
Mount Nebo†	77	43	61.7	4.09	
New Gascony*‡	88[f]	52[f]	71.0[f]	3.46	
Newport *a*†	.....	.....	.....	2.99	
Newport *b*†	95	41	69.6	2.78	
Newport *c*†	92	41	67.6	2.61	
Osceola†	92	43	68.3	1.53	
Ozark†	91	46	69.6	4.86	
Pine Bluff†	90	42	70.4	5.57	
Pocahontas†	.....	39	.....	2.93	
Prescott†	90	46	71.1	5.12	
Rison†	90	42	68.8	4.22	
Russellville†	90	44	69.2	3.75	
Searcy†	92	42	69.2	4.92	
Stuttgart†	91	43	69.4	2.81	
Texarkana†	93	46	71.5	4.95	
Washington†	88	48	69.5	5.53	
Wiggs	.....	.....	.....	5.50	
Winslow†	84	40	64.2	6.43	
California.					
Adin	88	31	52.8	2.58	2.5
Ager	96	32	59.2	0.94	
Agnew	88	35	56.4	0.83	
Arlington Heights	97	42	65.5	0.00	
Athlone*§	94	50	67.2	0.62	
Ballast Point L. H	.....	.....	.....	0.20	
Barstow†	99	31	65.0	0.00	
Bear Valley†	.....	.....	.....	6.57	7.0
Berkeley	89	44	60.0	1.06	
Bishop†	92	32	61.8	0.08	
Bishop Creek*§	96	50	71.3	0.05	
Boca*§	89	32	52.7	0.90	1.0
Bodie†	77	15	44.6	0.44	1.4
Bowmans Dam†	.....	.....	.....	9.15	14.0
Borden*‡	100	54	69.9	0.54	
Caliente*§	97	52	69.5	0.87	
Calloway Canal†	.....	.....	.....	0.42	
Cape Mendocino L. H	.....	.....	.....	4.26	
Cedarville†	84	28	53.8	1.47	
Centerville*‡	97	54	63.3	0.86	
Chico*§	98	54	68.4	0.51	
Cisco*§	60	29	44.0	.....	12.0
Claremont†	91	39	62.5	0.38	
Cloverdale*‡	93	48	65.6	2.45	
Colegrove	.....	.....	.....	0.09	
Corning*§	96	54	70.8	0.20	
Crescent City†	85	37	52.8	6.79	
Crescent City L. H	.....	.....	.....	8.47	
Davisville *b*	93	45	66.6	0.48	
Delano*§	96	55	72.6	0.86	
Delta*§	96	48	65.2	.....	
Drytown	92	35	60.7	2.57	
Dunnigan*§	94	54	74.3	0.30	
Durham*‡	92	45	63.8	0.68	
East Brother L. H	.....	.....	.....	0.25	
Edgwood*§	88	38	57.5	0.73	
Edmanton*‡	81	29	48.4	7.18	8.0
Escondido	97	41	68.2	0.35	
Evergreen	.....	.....	.....	1.25	
Fall Brook*‡	92	44	63.0	0.24	
Florin*§	97	43	64.4	0.81	
Folsom City *b*‡	95	55	66.7	1.43	
California—Cont'd.					
Fort Ross	.....	.....	.....	3.84	
Fremontville*‡	95	46	62.5	0.17	
Georgetown†	83	37	58.1	4.30	
Glendora	.....	.....	.....	0.62	
Goshen*§	96	54	71.7	.....	
Grass Valley	.....	.....	.....	3.46	
Greenville†	88	29	53.3	3.42	2.0
Healdsburg*‡	92	40	59.0	1.49	
Hendersons Ranch	.....	.....	.....	0.05	
Hollister	93	38	59.3	1.00	
Hueneme	.....	.....	.....	0.09	
Humboldt L. H	.....	.....	.....	4.14	
Hydesville†	80	32	54.6	2.92	
Independence	.....	.....	.....	.....	T.
Indio*§	108	62	83.8	0.00	
Iowa Hill*‡	87	43	60.8	3.92	
Jackson	82	35	57.0	2.68	
Jolon	.....	.....	.....	0.02	
Julian†	96	34	59.6	0.45	
Keeler*§	94	50	73.5	T.	
Keene*§	90	44	62.1	1.25	
Kennedy Gold Mine	88	38	60.2	3.18	
Kernville	.....	.....	.....	0.00	
King City*§	102	40	58.7	0.13	
Kingsburg*§	98	55	72.1	0.36	
Kono Tayee	84	44	60.6	1.14	
Lagrange*§	96	46	65.7	0.97	
La Porte*†‡	72	32	46.6	8.55	19.0
Lemoore*§	98	50	69.8	0.26	
Lick Observatory†	79	31	52.2	2.39	1.0
Lime Kiln	101	44	69.2	.....	
Lime Point L. H	.....	.....	.....	0.60	
Lodi	92	44	68.1	0.63	
Los Alamos†	.....	.....	.....	0.56	
Los Gatos *b*	86	43	58.8	1.00	
McMullin*‡	100	44	70.0	0.00	
Malakoff Mine*‡	86	40	59.2	6.03	T.
Mammoth Tank*§	109	60	81.6	0.00	
Manzana	94	33	63.5	T.	
Mare Island L. H	.....	.....	.....	0.49	
Mariposa*‡	88	46	63.2	0.92	
Merced*§	100	50	67.2	0.64	
Middletown*†‡	96	40	62.1	1.75	
Mills College	.....	.....	.....	1.18	
Milton (near)*‡	97	50	66.4	1.10	
Modesto*§	98	53	70.2	0.45	
Mohave*§	98	44	68.7	0.00	
Mokelumne Hill*§	.....	48	60.4	2.56	
Monterey*§	88	46	58.7	0.58	
Mountain View	.....	.....	.....	0.68	
Mount Frazier	.....	.....	.....	0.40	
Mount Glenwood*‡	93	51	67.7	0.77	
Mutah Flat	.....	.....	.....	0.00	
Napa *b*	89	44	62.2	0.85	
Needles†	106	59	81.9	0.00	
Nevada City†	82	33	56.8	3.42	1.0
Newcastle *a*†	90	40	61.2	1.69	
Newhall*§	97	50	66.5	0.00	
Nordhoff†	100	40	64.1	0.00	
Oakland *a*	87	46	59.0	1.12	
Ogilby*§	114	60	84.4	0.00	
Oleta*‡	85	45	58.0	2.25	
Ontario *b*	95	51	69.0	0.30	
Orangevale†	94	49	67.0	1.12	
Orland*§	100	50	69.0	0.56	
Ormonde†	.....	.....	.....	5.60	
Oroville *b*	94	48	65.4	0.65	
Palermo†	98	39	67.6	0.76	
Pasadena†	89	44	63.8	0.41	
Paso Robles *b*	94	36	61.2	0.06	
Petaluma*‡	89	50	60.8	0.81	
Piedras Blancas L. H	.....	.....	.....	0.39	
Pigeon Point L. H	.....	.....	.....	1.04	
Pilot Creek	.....	.....	.....	5.72	4.0
Placerville *b*	86	34	58.0	2.58	
Point Ano Nuevo L. H	.....	.....	.....	1.16	
Point Arena L. H	.....	.....	.....	2.47	
Point Bonita L. H	.....	.....	.....	1.17	
Point Conception L. H	.....	.....	.....	0.70	
Point Fermin L. H	.....	.....	.....	0.30	
Point George L. H	.....	.....	.....	4.55	
Point Hueneme L. H	.....	.....	.....	0.20	
Point Lobos	81	46	54.8	0.75	
Point Loma L. H	.....	.....	.....	0.04	
Point Montara L. H	.....	.....	.....	0.89	
Point Pinos L. H	.....	.....	.....	0.82	
Point Reyes L. H	.....	.....	.....	1.25	
Point Sur L. H	.....	.....	.....	0.66	
Pomona (near)	99	43	68.2	0.00	
Portersville*§	98	54	73.4	0.35	
Poway*§	.....	54	61.3	0.26	
Quincy†	83	31	54.4	3.86	T.
Ravenna*§	97	48	67.0	0.00	
Redding *b*†	93	46	65.8	2.61	
Redlands *a*	.....	.....	.....	0.57	
Reedley (near)*‡	96	52	69.6	0.40	
Represa	88	46	63.7	1.83	

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
California—Cont'd.	°	°	°	*Ins.*	*Ins.*
Rio Vista	94	45	63.3	0.84	
Riverside†	99	42	67.7	0.26	
Roe Island L. H				0.75	
Rosewood	101	41	65.6	0.42	
Sacramento *a*	92	45	65.2	0.68	
Salinas				0.45	
Salton*§	116	70	90.1	0.00	
San Bernardino†	95	42	66.3	0.44	
San Jacinto†	97	37	65.8	0.26	
San Jose *b*	90	32	58.0	1.36	
San Leandro*[1]	88	54	61.7	0.82	
San Luis L. H				0.35	
San Luis Obispo *a*				0.48	
San Mateo*§	89	50	62.3	0.38	
San Miguel*§	94	50	66.2	0.09	
San Miguel Island†	82	47	56.6	0.05	
San Rafael†	89	40	59.4	0.88	
Santa Ana*§	88	54	69.1	0.10	
Santa Barbara *a*	81	46	60.5	0.02	
Santa Clara *a*§	86	44	57.8	0.98	
Santa Clara *b*	96	38	61.0	0.11	
Santa Cruz *b*†	92	40	61.0	1.15	
Santa Cruz L. H				0.46	
Santa Maria	94	40	59.2	0.51	
Santa Monica*§	72	50	61.0	0.08	
Santa Paula *b*†	94	36	58.5	0.00	
Santa Rosa*§	86	52	65.6	1.39	
Saticoy†				0.00	
Skye Valley				0.35	
Sneddens Ranch				0.00	
S. E. Farallone L. H				0.15	
Stanford University	88	31	57.6	0.66	
Stockton *a*	92	46	62.6	0.77	
Summerdale†				2.34	4.0
Susanville†	84	32	58.0	1.50	1.0
Sutter Creek*§	83	36	57.6	2.33	
Tecarte Dam*§	96	38	55.9	0.39	
Tehama*§	92	55	70.7	0.80	
Tejon Ranch				0.49	
Templeton*§	97	44	63.9	0.22	
Trinidad L. H				4.39	
Truckee*§	78	26	46.3	2.40	10.0
Tulare *b*				0.59	
Tulare *c*	102	40	68.2	0.60	
Turlock *b*†	97	36	59.4	0.39	
Ukiah†	90	37	58.2	1.96	
Upper Lake	89	41	59.6	1.39	
Upper Mattole*[1]	90	42	56.2	7.20	
Vacaville *a**[1]	94	52	65.3	1.02	
Ventura†	75	44	59.4	0.07	
Volcano Springs*§	116	69	93.4	0.00	
Walnut Creek	96	39	61.4	0.48	
Wenrich Ranch				0.60	
Wheatland	95	45	64.8	1.29	
Williams*§	96	52	69.2	0.13	
Willows *b*§	95	52	68.8	0.78	
Wilmington*§	74	61	67.8	0.00	
Wire Bridge*§	89	49	64.7	2.21	
Yerba Buena L. H				0.25	
YreKa†	91	28	56.2	1.59	
Yuba City*§	86	58	69.8	0.58	
Engineers Quarters‡				0.00	
Morses House‡				0.00	
Grass Valley‡				0.00	
Deep Creek‡				0.00	
Holcomb Creek‡				0.00	
Squirrel Inn‡				0.00	
Green Valley‡				0.00	
Tunnel No. 2‡				0.00	
Colorado.					
Alma†	66	— 1	38.0	4.49	
Antlers†	89	28°	56.5	1.06	
Arkins				4.95	
Boulder†	86	34	56.8	4.28	
Box Elder				3.51	
Breckenridge†	65	— 6	29.9	4.39	43.9
Canyon†	92	31	57.0	3.04	
Capps†				4.35	16.0
Castle Rock†	90	25	54.2	2.67	
Climax *†[1]	56	18	32.6	7.40	74.0
Collbran				0.69	
Colorado Springs†	85	30	52.1	2.70	
Cope†	97	30	58.7	2.46	
Crook	106	24	60.0	1.85	
Deer Trail*§	90	35	59.2	1.75	
Delta†	93	29	57.4	0.03	
Denver					T.
Divide Exper. Station	82	25	47.8	4.33	11.0
Downing†	90	16	56.4	2.26	
Dumont†	82	22	49.9	5.61	14.0
Durango†	81	34	54.5	0.99	0.2
East Dale				1.95	1.5
First View*§	95		61.1	2.14	
Fleming				2.05	
Fort Collins†	90	29	53.6	3.62	
Fox				2.54	
Garnett				2.49	T.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Colorado—Cont'd.	°	°	°	*Ins.*	*Ins.*
Glen Eyrie†	84	28	53.1	3.21	
Golden *[1]	94	35	57.6	6.99	
Gold Hill	77	28	47.8	5.50	25.0
Grand Junction†	89	36	61.4	0.35	
Greeley†	87	31[4]	55.8	3.13	
Gulch				1.98	6.5
Gunnison†	75	18	47.1	1.80	0.2
Holly				1.99	
Holyoke *a*				2.74	
Holyoke *b*				2.70	
Hugo *§	90	38	59.2		
Hugo (near) †	87	28	54.7	2.05	
Husted †	89	25	53.1	2.86	8.0
Julesburg †	98	28	58.2	2.87	
Kit Carson *[1]	94	36	61.0		
La Jara †	86	28	52.2	1.41	T.
Lake Moraine †	69	5	39.4	4.20	27.0
Lamar †	100	34	63.2	1.78	
Laporte				3.58	
Las Animas †	96	28	58.6	2.06	
Lay *†[1]	86	33	59.5	1.77	T.
Le Roy †	95	31	57.3	2.05	
Longmont †	93	31	56.6	3.05	
Loveland				2.55	
Manhattan				3.71	
Meeker †	84	23	51.6	1.79	
Minneapolis †	97	30	62.1	1.89	
Monte Vista	80	33	49.6	1.67	
Moraine †	74	21	45.0	4.63	T.
Ouray †	78	30	51.2	4.09	4.5
Pagoda †	79	19	47.6	2.15	T.
Paonia †				0.05	
Parachute †	86	31	57.7	0.31	
Pinkhamton				1.73	
Rangely †	88	22	54.9	0.25	
Redcliff				0.33	2.2
Rico				1.76	17.6
Rocky Ford †	96	31	60.5	1.90	
Ruby †				5.64	52.0
Saguache †	75	23	51.1	1.28	
St. Cloud †				3.50	5.0
San Juan †	82			1.88	8.8
San Luis †	83	30	52.4	2.65	5.5
Santa Clara *†[1]	90	30	49.0	4.98	
Seibert †				2.94	
Smoky Hill Mine †	88	19	47.8	5.31	16.0
Springfield †				3.63	
Stamford *[1]	76	22	40.2	5.70	
Steamboat Springs	85	10	47.0	2.60	1.0
Sterling				1.14	
Sulphur Springs †‡	78	17	47.5	2.17	
Surface Creek †	83	32	55.5	0.45	
Thon †	96	26	54.5	2.54	T.
T. S. Ranch †	88	34	59.0	0.51	
Twin Lakes				2.15	21.5
Vernon †	96	27	57.2	3.12	
Vilas				2.10	
Wallet †				2.84	T.
Yuma				2.76	
Connecticut.					
Bridgeport *[1]	94	44	58.4	1.33	
Canton †	93	26	60.4	1.79	
Colchester	90	32	58.8	1.89	
Falls Village				2.49	
Greenfield Hill				2.02	
Hartford *b*				2.13	
Hartford *c*	89	35	60.3		
Lake Konomoc				3.01	
Middletown	94	32	63.9	2.12	T.
North Franklin				2.75	
North Grosvenor Dale	95	26	58.1	2.55	
Norwalk	96	29	58.5	1.79	
Southington *[1]	87	32	59.6	2.15	
South Manchester				1.87	
Storrs	89	30	57.7	2.16	
Thompson *[1]	88	30	56.5		
Voluntown †	92[2]	30[2]	57.8[2]	3.52	
Wallingford †				1.52	
Waterbury	89	31	59.6	1.96	
West Simsbury				1.56	
Windsor	89	33	59.5	1.62	
Delaware.					
Dover †	95	41	62.1	2.75	
Kirkwood[3 4]			57.2		
Milford	96	39	62.5	4.48	
Millsboro	97	38	61.4	5.52	
Newark	92	37	61.0	2.72	
Seaford †	94	38	61.2	4.27	
Wilmington †	88	41	65.4	2.15	T.
District of Columbia.					
Dist'ing Reservoir *§	91	42	63.3	2.43	
Receiving Reservoir *§	93	43	63.1	2.78	
West Washington	98	38	64.2	3.05	
Florida.					
Amelia †	87	54	72.4	2.99	
Archer †	95	51	75.8	5.22	
Avon Park †	94	60	78.0	6.97	

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Florida—Cont'd.	°	°	°	*Ins.*	*Ins.*
Brooksville †	92	50	77.8	2.39	
Clermont †	91	60	74.4	3.73	
Earnestville †	97	55	77.6	6.28	
Eustis †	97[1]	51[1]	78.8[1]	4.97	
Federal Point †	89	53	73.3	4.03	
Fort Meade †	89	56	75.6	5.99	
Gainesville †	94	54	76.2	4.26	
Grasmere †	89	57	75.4	4.33	
Green Cove Springs †	88	52	71.6	3.12	
Homeland †	92	64	78.0	5.20	
Hypoluxo *†[1]	92	67	78.2	8.54	
Kissimmee †	98	67	80.8	3.86	
Lake City †	93	54	75.6	2.56	
Manatee †	97	53	75.4	3.13	
Merritts Island †	90	62	77.0	9.31	
Moseley Hall †	93	52	74.8	3.74	
Mullet Key †	89	62	77.6	1.15	
Myers †	94	61	77.7	3.96	
New Smyrna †	90	53	72.4	4.97	
Oak Hill *[1]	89	70	77.4		
Ocala *†[1]	90	54	73.8	4.61	
Orange City †	92	60	77.5	5.24	
Orange Park	90	50	74.1	2.57	
Orlando †	92	56	77.0	7.31	
Oxford *†[1]	90	62	73.6	5.08	
Plant City †	97	56	77.4	5.87	
St. Francis Barracks	89	56	72.4	3.45	
Tallahassee †	92	48	73.4	3.68	
Tarpon Springs †	89	56	75.0	2.75	
Georgia.					
Adairsville †	90	38	66.4	3.75	
Alapaha †	96	42	72.9	7.18	
Albany †	98	46	73.7	3.11	
Americus †	99	44	74.0	3.61	
Athens *b*†	94	39	68.5	4.80	
Bainbridge *a* †	97	46	74.4	4.48	
Bainbridge *b* †				4.68	
Blakely *†[6]	93	47	70.8	1.81	
Brag †	102	42	72.2	2.88	
Brunswick †	91	50	72.8	4.78	
Camak †	92	41	68.6	4.71	
Canton †				4.86	
Clayton †	92	31	62.4	6.63	
Columbus †	92	47	72.2	2.95	
Cordele †	95	46	72.4	1.42	
Covington †	92	39	67.6	2.77	
Dahlonega †	89	34	62.6	7.98	
Diamond †	89	32	63.6	8.24	
Dublin *b*†				1.75	
Eastman †	94°	50	73.8°	4.28	
Elberton †	94	41	68.7	3.57	
Fleming †	98	42	72.6	4.12	
Forsyth *[1]	92	54	70.6	4.62	
Fort Gaines †	96	46	72.3	2.24	
Gainesville †	84	39	62.7	8.95	
Gillsville †	93	40	66.7	5.44	
Griffin †	98	43	65.0	6.20	
Hawkinsville †	89			4.30	
Hephzibah *†[6]	86	50	71.7	4.56	
Lagrange †	92	39	67.8	4.94	
Leverett †	93			2.11	
Louisville †	89	42	68.5	4.05	
Lumpkin †	93	50	70.9	4.44	
Macon *b*†	92	42	69.8	4.73	
Marietta †	89	39	65.3	3.90	
Marshallville †	92	46	73.0	4.17	
Milledgeville †	89	44	68.7	5.38	
Millen †	98°	42°	74.1°	5.52	
Monticello *†[1]	88	51	70.5	2.80	
Morgan †	98	44	72.4	2.99	
Newnan †	92	43	68.9	5.27	
Piscola	95	53	75.0	0.51	
Point Peter *[1]	92	41	67.3	4.45	
Poulan †	95	44	71.3	2.51	
Quitman †	95	43	72.7	2.35	
Ramsey †	89	38	65.6	5.30	
Resaca †				3.47	
Reynolds †				1.75	
Rome †	90	40	66.4	5.40	
Talbotton †				2.13	
Thomasville †	95	46	73.6	2.22	
Toccoa †	92	37	65.6	7.53	
Union Point †	90	43	68.0	5.09	
Washington †	93	42	68.8	3.34	
Way Cross †	90	50	72.4	3.99	
Waynesboro †	96	43	70.8	3.14	
West Point †	92	43	71.0	3.84	
Whitesburg †				3.85	
Idaho.					
American Falls †	85	24	54.0	1.04	
Atlanta †	75	21	45.2	3.70	T.
Bannister †				0.29	2.0
Birch Creek †	83	22	51.4	0.83	T.
Bliss †	88	29	57.4	1.55	
Boise Barracks †	87	33	57.2	1.80	
Chesterfield †	86	14	48.6	2.29	1.0
Corral *†[1]	78	34	50.8	2.16	

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Idaho—Cont'd.	°	°	°	*Ins.*	*Ins.*
Dairy †				2.02	
Fort Lemhi †	89	32	53.7	1.70	T.
Fort Sherman †	86	31	53.0	2.93	
Fraser †[4]	84	31	51.4	3.57	
Gibbonsville †	83	24	52.0	1.75	
Grangeville	76	31	50.2	4.76	T.
Hailey †	87	19[8]	51.0[4]	1.85	1.0
Idaho City †	82	26	51.1	2.68	T.
Idaho Falls					T.
Kootenai †	90	29	52.7	2.54	
Lake †	66	18	42.6	0.34	3.4
Lewison †	92	30	59.2	2.07	
Lost River †				1.73	T.
Martin †	77	23	48.9	2.17	
Moscow †	81	30	51.2	2.17	
Murray †	82	30	49.8	4.14	
Nampa	85	27	55.6	1.29	
Oakley †	89	27	55.9	0.67	
Orchard †				0.81	
Paris †	81	22	50.2	2.35	12.0
Payette †	89	30	58.5	1.79	
Salubria †	81	28	56.8	2.35	
Soldier †	76	28	51.0	1.40	
Swan Valley †	82	20	49.8	2.44	T.
Three Creek †		19		1.50	
rren †	75	24	47.2	3.58	
Illinois.					
Albion †	94	32	64.7	1.87	
Alexander †	95	32	63.2		
Anna †				2.10	
Altamont *	90	28		1.77	
Ashton *† [1]	91	38	60.6	3.15	
Atlanta				1.05	
Aurora †	94	28	60.2	3.34	
Beardstown †				2.13	
Bloomington †	98	26	64.0	1.13	
Bushnell †	94	31	64.1	2.72	
Cambridge	90	32	64.2	2.42	
Carlinville †	95	30	65.0	1.42	
Carrollton	91	32	63.2	2.01	
Catlin †	96	29	65.4	1.33	
Chicago					T.
Chemung *[1]	95	29	61.2[4]	4.96	T.
Chester †				2.07	
Clear Creek †	97	24	63.8	1.53	
Cordova †				2.25	
Decatur †	97	25	66.0	1.07	
Dixon †	92	31	61.2	4.46	
Duquoin				2.25	
East Peoria †	98[8]	28[1]	68.8[2]	1.13	
Effingham † [h]	98	32	63.9		
Evanston *[10]	97	34	59.0		
Fort Sheridan †	92	29	57.4	3.70	
Frederick				1.65	
Galva †	93	28	63.1	2.53	
Gilman †[6]	90	30	67.4	1.35	
Grafton †				2.59	
Greenville †	95	33	66.0	3.16	
Griggsville †	93	33	64.5	2.41	
Halliday *[5]	92[4]	43[4]	72.4[4]	1.89	
Havana †	94	31	66.0	1.51	
Herrins Prairie *[1]	92	36	66.8	1.55	
Hillsboro †	99	34	67.0	1.72	
Holts	94	35	66.6	2.35	
Joliet †	95	32	63.6	1.95	
Jordans Grove †	91	35	64.9	3.08	
Kankakee †	89	34	60.6	2.64	
Knoxville *[5]	92	30	63.4	3.62	
La Grange †	93	29	59.8	2.24	
La Harpe	92	28	63.4	1.40	
Lanark *† [1]	91	35	60.4	3.78	
Lexington *† [1]	92	36	63.4	1.23	
Loami				2.25	
Louisville †	92	31	64.3	2.47	
McLeansboro *† [3]		44	64.2	1.99	
Martinsville †	93	28	63.8	1.10	
Mascoutah *[6]	95	33	65.4	3.20	
Mattoon *[1] *	93	30	63.8	0.73	
Monmouth †	91	25	62.8	2.04	
Mount Carmel †				2.43	
Mount Pulaski	95	30	64.5	1.32	
Mount Vernon	92	31	65.4	2.21	
New Burnside †	97	32	65.6	1.98	
Olney *a* [1]	94	31	66.7	1.78	
Olney *b* [1]	102	34	68.4	2.15	
Oregon †				3.35	
Oswego *[1]	94	27	59.1	3.27	
Ottawa †	99	29	62.8	1.06	
Palestine †	95	30	61.8	3.43	
Paris †	95	27	64.1	0.88	
Peoria *a* †				1.67	
Peoria *b*	98	39	66.5	1.84	
Philo †	97	34	62.2	0.82	
Rantoul *† [5]	95	32	65.0	1.41	
Riley †	92	29	59.2	2.91	
Rockford †	94	33	62.2	3.54	
Rushville	94	34	65.2	3.29	
Illinois—Cont'd.	°	°	°	*Ins.*	*Ins.*
St. Charles	98	27	60.3	2.44	
St. John *† [5]	93	44	69.8	2.50	
Streator †	96	29	63.4	0.80	
Sycamore *† [1]	89	32	59.6	2.52	
Tampico	92	28	61.5	2.36	
Tiskilwa	100	34	67.8	2.70	
Tuscola *† [1]	94	36	64.1	0.60	
Walnut †	95	29	64.6	2.39	
Warsaw †				2.66	
Wheaton	94	28	58.0	2.95	
Winnebago †	92[4]	29[4]	59.6[4]	4.07	
Zion †	92	28	60.4	4.64	
Indiana.					
Angola *[1]	98	34	61.7	3.17	2.2
Ashboro †	92	30	61.9	0.98	
Bedford	101	31	65.1	1.45	
Butlerville †	96	31	62.4	1.94	
Cambridge City †	93	28	59.9	1.76	
Columbia City *[1]	93	32	61.3	1.93	1.0
Columbus †	96	31	62.1	1.15	
Connersville †	92	32	60.9	1.93	
Degonia Springs *[6]	91	37	63.9	2.80	
Delphi	97	32	64.5	1.06	
Edwardsville *† [1]	90	34	65.0	1.57	
Evansville †	101	35	66.7	2.85	
Farmland †	93	31	62.6	1.44	
Franklin *[1]	93	39	63.5	0.69	
Hammond †	96	31	62.8	1.04	
Huntingburg †	92	34	64.3	1.50	
Huntington	95	33	62.5	1.71	T.
Jasper †	95	32	65.0	1.55	
Jeffersonville	93	37	64.5	2.28	
Kokomo †	97	31	63.8	0.82	
Lafayette †	97	29	63.2	0.94	
Logansport *a* †				1.66	
Logansport *b*	93	34	63.9	1.44	
Lyford †	93	29	63.2	1.79	
Madison †	94	35	64.5	2.17	
Marengo *[1]	93	38	65.6	3.70	
Marion †	96	30	62.9	0.81	T.
Mauzy †	94	31	61.7	0.79	
Mount Vernon †	92	36	65.0	1.51	
Plymouth †				1.43	T.
Princeton *† [1]	98	30	64.5	1.70	
Rockville †	96	28	63.5	1.28	
Rushville †				0.86	
Scottsburg [1]	94[8]	33	64.2	2.64	
Seymour †	96	34	64.4	3.41	
South Bend †	95	30	61.8	1.30	T.
Sunman *[6]	94	31	62.6	2.07	
Terre Haute †	97	32	66.0	0.85	
Topeka †	94	30	62.1	2.15	0.5
Valparaiso †	95	32	61.2	1.91	T.
Vevay	95	32	65.1	3.19	
Vincennes †	99	31	66.0	1.85	
Worthington †	92	31	63.5	0.91	
Indian Territory.					
Eufaula †				8.40	
Healdton †	98	38	71.5	1.63	
Kemp †	96	42	70.6	6.68	
Lehigh †	93	37	67.7	5.20	
Purcell †	97	33	68.2	1.86	
Tahlequah †	92	39	67.2	7.09	
Tulsa †				3.20	
Iowa.					
Afton	96	32	63.2	3.04	
Algona *[1]	96	34	60.4	3.39	
Alta †	96	28	60.5	1.40	
Amana †	91	27	61.6	4.41	
Ames *b*	93	29	61.0	4.28	
Ames *c*				4.41	
Atlantic †	96	25	60.6	1.20	
Atlantic (near)	95	32	63.2	1.95	
Audubon	94	27	61.3	1.71	
Belknap (near)	90	35	62.3	2.80	
Belle Plaine	93	28	62.0	3.43	
Bonaparte †	90	31	62.5	4.37	
Carroll	95	28	60.6	1.61	
Cedar Falls †	92	29	60.6	4.26	
Cedar Rapids †	90	30	63.0	2.84	
Centerville †	93	34	63.8	3.45	
Charlton	89	38	63.6	3.04	
Charles City †	92	28	59.6	3.50	
Clarinda †	93	34	62.2	2.99	
Clinton	94	29	62.3	5.79	
College Springs	98	33	63.8	3.49	
Corning †	94	30	62.8	3.78	
Cresco †	90	29	58.2	5.20	
Decorah †	92	27	60.0	4.42	
Delaware *[3]	91	29	59.8	8.51	
Denison †	98	27	60.0	1.93	
Eldora	91	30	61.3	3.61	
Elkader †	94	26	60.7	3.88	
Emmetsburg	95	26	58.8	3.37	
Estherville	96°	31°	62.0°	1.67	
Fairfield †	89	29	61.5	4.19	
Fayette †	91	25	59.7	4.28	
Iowa—Cont'd.	°	°	°	*Ins.*	*Ins.*
Fort Madison *† [1]	95	39	66.5	2.23	
Galva †	98	28	62.2	2.16	
Garden Grove	92	33	62.8	2.18	
Glenwood †	104	32	66.2	1.40	
Grand Meadow *[1]	90	35	61.2	3.54	
Greenfield †	95	30	60.2[b]	4.59	
Grinnell †	90	38	62.7	5.28	
Grundy Center	92	29	60.5	4.87	
Guthrie Center	93	25	60.2	3.11	
Hampton	93	27	59.2	3.70	
Hawkeye				3.70	
Hopeville †	91	33	62.3	2.98	
Humboldt †	98	28	61.5	2.48	
Independence †	90	29	59.6	3.45	
Indianola †	92	31	62.5	3.64	
Iowa City †	91	30	62.8	4.26	
Iowa Falls †	94	28	61.0	3.37	
Keosauqua †	90	32	62.7	5.05	
Knoxville	93	33	62.3	1.76	
Larrabee †	98	26	60.5	2.44	
Le Claire †				1.77	
Lenox *[1]	94	42	63.7	3.80	
Logan †	100	29	63.5	0.84	
Madrid	94	26	62.1	4.00	
Malvern	100	30	63.0	1.50	
Maple Valley				1.57	
Marshall †	92	29	61.2	3.86	
Mason City †	92	26	59.0	2.91	
Maxon *[1]	92	35	63.4	2.80	
Mechanicsville	90	29	60.5	2.93	
Monticello *† [1]	90	30	60.7	2.82	
Mooar	92	32	63.2	3.11	
Mount Ayr †	96	31	65.0	2.10	
Mount Pleasant *[1]	89	38	63.3	4.21	
Mount Vernon *[1]	92	38	62.3		
Neola	101	29	65.3	1.53	
Newton †	93	32	62.3	5.03	
North McGregor †				2.38	
Ogden	97	26	61.4	3.20	
Osage *† [3]		37	58.1	4.19	
Osceola	92	34	62.7	3.54	
Oskaloosa †	93	31	62.5	2.82	
Ottumwa	93	33	62.9	5.54	
Ovid †	90	31	61.9	2.46	
Panama †	97	29	62.8	0.88	
Primghar	93	28	59.5	2.34	
Rock Rapids	92	24	58.4	4.81	
Sac City †	97	28	62.4	2.60	
Seymour †	94	33	62.6	2.48	
Sibley	92	26	58.8	3.39	
Sidney	97	33	64.1	3.07	
Spencer	97	26	58.4	2.23	
Spirit Lake †	96	28	61.8	1.33	
Toledo *[1]	91	29	61.6	4.13	
Villisca †	95	29	61.9	3.44	
Vinton *[1]	89	36	60.6	5.09	
Washington †	91	30	62.2	3.18	
Waterloo	95	28	61.8	4.91	
Waukee	95	31	63.6	3.40	
West Bend *† [1]	94	35	59.8	2.84	
Williams	94	27	60.2	5.78	
Wilton Junction †	92	25	61.9	3.01	
Kansas.					
Abilene †	102	34	68.5	1.37	
Achilles *[3]	106	43[4]	61.9[4]	4.74	
Altoona *† [3]	98	45	66.2	2.85	
Atchison †	94	37	65.0	1.77	
Beloit †	102	33	70.1	2.32	
Blaine	97	36	66.0	3.14	
Burlington †	98	34	65.4	6.66	
Colby †	100	27	60.9	3.14	
Coldwater †	100	34	67.8	0.35	
Collyer *[5]	104	34	69.3	3.00	
Columbus †	94	37	66.0	4.10	
Coolidge †	101	32	63.4	1.70	
Cunningham †	104	28	68.0	0.53	
Downs				1.43	
Dresden *† [5]	102	30	66.1	3.51	
Elk City *[1]	93	42	67.4	2.87	
Ellinwood *[3]	98	31	62.6	0.81	
Emporia †	92	38	66.3	3.85	
Englewood †	101	30	65.4	0.78	
Eureka †				1.10	
Eureka Ranch †	103	26	63.4	1.47	
Fort Riley †	95	35	66.3	3.04	
Fort Scott				4.18	
Frankfort	103	37	70.2	2.47	
Garden City †	100	28	64.1	2.12	
Garfield				0.52	
Gibson *[1]	100	30	60.5	2.93	
Girard *[1]	93	45	67.3	4.30	
Gove *† [1]	106	41	64.4	2.74	
Grainfield *[6]	98	32	62.0	5.00	
Grenola *[1]	95	41	66.9	1.55	
Grinnell *[5]	106	44	72.9		
Halstead	90	32	63.9	1.57	
Haviland	99	31	67.1	0.39	

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Kansas—Cont'd.	°	°	°	*Ins.*	*Ins.*
Hays†	101	22	62.7	0.22	
Horton†	96	36	66.0	3.10	
Hutchinson†	100	34	66.7	0.70	
Independence	98	37	68.7	1.44	
Ionia†	101	31	65.0	2.20	
Jaqua†	98	27	61.3	2.46	
Johnson†	101	31	64.2	1.99	
Lakin†	102	35	67.3	2.19	
Lawrence*[1]	94	34	66.2	3.66	
Lebo†	98	33	67.3	3.31	
Leoti†	101	33	65.4	2.10	
Macksville†	100	32	66.8	1.96	
McPherson†	99	32	66.7	4.00	
Manhattan *b*	101	33	68.4	3.02	
Manhattan *c*[1]	97	27	62.1	2.98	
Marion†	98	32	67.7	0.81	
Meade†	101	36	69.0	1.03	
Medicine Lodge	.....	.....	.....	1.40	
Minneapolis†	101	29	66.8	1.13	
Morland†	102	27	62.6	6.10	
Morton†	100	30	65.6	1.31	
Mount Hope*[1]	95	43	68.0	1.80	
Ness City†	99	41	69.2	1.85	
New England Ranch†	97	32	63.1	3.83	
Norton†	102	26[e]	62.6[e]	5.16	
Oberlin†	.....	.....	.....	3.79	
Olathe†	89[e]	34[e]	64.2[e]	5.10	
Oswego†	98	40	68.8	3.22	
Phillipsburg†	106	30	63.1	2.36	
Quinter*[1]	103	34	67.5	3.00	
Rome*†[1]	98	39	68.1	0.66	
Salina†	99	31	65.4	1.84	
Sedan†	95	40	68.4	3.01	
Sharon Springs*[1]	98	42	60.9	3.75	
Tribune†	98[1]	31[1]	63.0[1]	3.32	
Ulysses†	103[e]	30[e]	64.0[e]	2.00	
Wakefield*[1]	100	45	68.8	2.80	
Wallace	.....	.....	.....	3.58	
Wamego*[1]	98	38	66.9	3.05	
Wellington*[1]	93	36	72.6	0.49	
Winfield*[5]	100	36	69.3	1.14	
Winona*[5]	107	44	66.7	3.25	
Yates Center†	93	34	65.6	5.08	
Kentucky.					
Alpha†	93	32	63.3	2.85	
Anchorage†	91	33	64.3	2.59	
Blandville†	91	31	64.3	1.44	
Bowling Green *a*[1]	90	31	61.1	5.70	
Bowling Green *b*†	96	35	66.9	5.42	
Burnside†	.....	.....	.....	4.02	
Caddo†	96	30	62.6	3.60	
Canton*†[1]	93	40	66.2	2.62	
Carrollton†	98	34	64.8	2.64	
Catlettsburg*†[5]	95	39	61.5	2.92	
Cromwell†	.....	.....	.....	4.04	
Eddyville†	.....	.....	.....	2.02	
Edmonton†	90	34	62.4	4.46	
Elizabethtown†	92	32	62.5	2.47	
Eubank†	95	29	63.4	2.78	
Falmouth†	.....	.....	.....	2.18	
Fords Ferry†	97	33	67.2	1.72	T.
Frankfort†	96	35	64.2	3.77	
Franklin*†[1]	94	35	65.5	3.48	
Georgetown	91	34	62.9	.....	
Greendale*[1]	90	39	63.2	3.07	
Greensburg*†[1]	91	39	62.7	2.18	
Harrodsburg†	96	33	63.5	6.62	
Harrods Creek†	96	35	65.0	1.93	
Henderson†	96	39	67.3	2.16	
Hendricks†	.....	.....	.....	3.85	
Herbert	99	33	66.4	3.42	
Lexington	.....	.....	.....	.....	T.
Louisa†	96	35	64.8	4.28	
Marrowbone†	94	32	63.8	4.76	
Middlesboro†	90	33	60.5	4.27	
Mount Sterling†	93	30	62.1	3.68	
Paducah *a*†	.....	.....	.....	1.57	
Paducah *b*†	96	41	68.0	1.47	
Pleasure Ridge Park†	92	32	63.7	2.53	
Princeton†[f]	94	37	62.4	1.69	
Russellville†	95	34	65.8	5.22	
Sandy Hook†	97	31	64.0	3.56	
Shelby City*[1]	92	35	61.7	3.52	
Shelbyville†	97	33	64.7	3.16	
South Fork†[2]	.....	.....	60.6	2.71	
Springfield †[2]	90	31	62.0	2.58	
Williamsburg†	.....	.....	.....	4.95	
Louisiana.					
Abbeville	88	49	73.2	4.60	
Alexandria†	90	45	71.6	2.57	
Amite†	90	44	73.0	8.39	
Bastrop†	88	45	69.2	4.08	
Baton Rouge†	90	46	74.1	4.11	
Calhoun†	90	45	70.6	4.94	
Cameron†	90	51	73.0	2.40	
Cheneyville†	90	44	72.1	4.69	
Clinton†	.....	.....	.....	2.74	
Coushatta *a*†	.....	.....	.....	3.93	
Coushatta *b*†	89	45	70.3	4.75	
Covington†	90	44	73.4	4.01	
Davis	90	41	68.1	3.73	
Delhi†	.....	.....	.....	3.95	
Donaldsonville†	90	48	74.4	9.00	
Emilie†	89	52	73.5	9.53	
Farmerville	89[e]	51[e]	69.6[e]	4.95	
Franklin†	90	45	74.9	2.42	
Grand Coteau	88	51	73.4	4.16	
Hammond†	95	43	75.2	5.91	
Houma†	93	45	76.0	7.50	
Jeanerette†	91	46	74.6	3.45	
Lafayette†	93	44	75.1	2.92	
Lake Charles†	88	48	73.6	4.45	
Lake Providence†	93	48	71.6	2.62	
Lawrence†	88	55	74.6	9.60	
Liberty Hill	92	42	70.9	5.63	
Maurepas	92	43	74.6	6.33	
Melville†	94	46	73.1	5.78	
Minden†	91	45	71.1	4.32	
Monroe†	90	48	72.6	4.52	
Natchitoches†	90	44	71.0	7.17	
New Iberia	88	51	74.0	4.00	
Oak Ridge†	96	.....	.....	2.93[b]	
Oberlin	90	45	69.6	3.40	
Opelousas†	90	40	73.8	4.02	
Oxford†	88	41	68.2	5.61	
Paincourtville†	91	45	75.1	5.64	
Plain Dealing†	87	46	69.4	6.86	
Rayne†	94	44	74.8	2.33	
Schriever†	93	46	75.3	7.93	
Shell Beach	90	52	74.0	2.81	
Southern University†	85	50	72.3	11.85	
Sugar Ex. Station†	90	52	74.4	12.15	
Sugartown†	87	48	72.1	6.15	
Thibodeaux	.....	.....	.....	7.75	
Wallace	90	49	74.2	11.68	
Maine.					
Bar Harbor	80	29	54.6	1.59	
Belfast*[6]	84	42	55.6	2.05	
Calais†	88	29	55.9	2.51	
Cornish*[1]	88	37	57.8	1.95	
Fairfield	89	30	57.8	1.83	
Farmington†	97	29	59.3	3.06	
Gardiner	91	32	58.0	1.50	
Houlton†	93	28	57.4	1.30	
Kineo†	88	28	58.9	2.58	
Lewiston	92	33	57.4	1.85	
Madison*[1]	96	40	58.6	.....	
Mayfield	90	27	56.0	3.83	
North Bridgton	92	32	57.5	2.74	
Orono†	89	31	58.1	2.13	
Petit Menan*[1]	66	35	46.2	.....	
West Jonesport*[1]	71	36	48.1	.....	
Maryland.					
Annapolis	94	40	61.6	3.41	
Bachmans Valley*[1]	95	34	61.9	2.95	
Bel Alton	95	40	63.8	4.40	
Boettcherville*[1]	96	34	62.0	2.10	
Charlotte Hall†	95	38	62.5	4.68	
Cherryfields†[2]	.....	.....	62.8	4.90	
Chestertown†	92	41	61.4	3.42	
College Park	94[e]	37[d]	60.5[d]	3.16	
Cumberland *a*†	93	35	62.2	1.52	
Cumberland *b*	98	38	67.4	1.82	
Darlington†	94	39	61.8	3.29	
Deer Park	93	20	55.2	2.75	1.0
Denton†	98	38	63.6	2.83	
Easton†	93	39	62.2	3.07	
Ellicott City	89	42	62.7	3.94	
Fallston*[1]	92	41	60.9	4.42	
Frederick *a*	95	37	63.1	3.81	
Garrison	92	37	61.4	3.98	
Glyndon	96	35	62.0	3.17	
Grantsville	89	27	55.8	2.28	1.5
Great Falls*[5]	92	44	63.7	3.49	
Green Spring Furnace	96	33	62.2	2.55	
Hagerstown†	98	35	63.2	2.69	
Hancock[g]	101	30	67.8	2.02	
Jewell†	95	39	62.0	4.31	
Johns Hopkins Hospital	95	40	62.2	.....	
La Plata†	96	38	63.5	5.40	
Laurel	93	36	60.0	3.42	
McDonogh[g]	91	40	61.0	.....	
Mardela Springs†	93	37	61.2	5.23	
Mt. St. Marys College[1]	90[e]	37	62.9	4.19	
Oakland†	86	27	54.4	3.76	7.0
Oldtown	.....	.....	.....	1.70	
Pocomoke City	96	42	63.0	4.33	
Popes Creek	100[e]	40[e]	63.2[e]	3.95	
Princess Anne	93	40	61.6	3.94	
Sharpsburg	96	34	62.8	2.17	
Solomons†	100	43	62.6	4.46	
Sunnyside	90	34	54.0	2.50	5.0
Upper Marlboro†	96	39	62.1	4.19	
Western Port	94	30	61.1	0.70	T.
Maryland—Cont'd.	°	°	°	*Ins.*	*Ins.*
Westminster	99	36	65.2	3.36	
Woodstock	95	38	61.8	2.03	
Massachusetts.					
Adams	89	32	59.2	.....	
Amherst	88	28	59.4	2.03	
Amherst Ex. Station *a*	92	29	58.9	2.07	
Amherst Ex. Station *b*	92	30	59.7	2.07	
Andover	89	30	58.0	1.23	
Ashland	.....	.....	.....	2.10	
Bedford	90	25	58.4	1.42	
Beverly Farms	87	29	54.9	2.72	
Blue Hill (summit)	90	33	58.4	2.53	
Blue Hill (valley)	90	27	58.6	2.31	
Boston *a*	.....	.....	.....	2.68	
Boston *b*	90	39	62.8	.....	
Brockton *a*	92	32	59.3	2.51	
Brockton *b*	.....	.....	.....	2.66	
Brockton *c*	.....	.....	.....	2.49	
Cambridge *a*	91	28	60.8	1.98	
Cambridge *b*	90	31	60.6	2.39	
Chestnut Hill	94	28	61.2	2.58	
Clinton	.....	.....	.....	1.08	
Concord†	92	25	58.3	1.56	
Dudley	91	30	58.0	1.43	
East Templeton*[1]	88	36	58.6	0.96	0.2
Egg Rock, Nahant	83	35	55.0	.....	
Fall River	90	32	58.4	4.27	
Fiskdale	.....	.....	.....	1.70	
Fitchburg *a*[1]	87	37	58.8	2.32	
Fitchburg *b*	92	29	59.1	2.11	
Framingham	92	26	59.8	1.94	
Groton	89	25	58.2	3.08	
Hadley	94	27	59.0	1.44	
Hingham	.....	.....	.....	3.50	
Hobbs Brook	.....	.....	.....	1.82	
Hyannis	92	34	58.4	3.63	
Hyde Park*[6]	.....	32	58.9	.....	
Lake Cochituate	94	23	59.3	2.03	
Lawrence	94	30	60.8	1.55	
Leeds	91	29	59.0	1.88	
Leominster	.....	.....	.....	2.16	
Long Plain*[6]	92	36	57.9	4.64	
Lowell *a*	92	30	60.1	1.68	
Lowell *b*	96	30	59.5	.....	
Lowell *c*	96	28	61.4	.....	
Ludlow Center	90	25	56.8	2.05	
Lynn *a*	87	32	57.6	3.21	
Lynn *b*	88	32	59.0	.....	
Mansfield*[1]	96	36	59.2	3.76	
Middleboro	91	25	57.4	3.56	
Milton	87	29	58.5	2.15	
Monroe	88	34	55.2	1.67	
Monson	91	28	59.6	2.46	
Mount Nonotuck	.....	.....	.....	2.08	
Mount Washusett	.....	.....	.....	2.66	T.
Mystic Lake	.....	.....	.....	2.71	
Mystic Station	.....	.....	.....	2.54	
Natick*[1]	90	37	60.4	1.88	
New Bedford *a*	91	32	57.0	3.39	
New Bedford *b*	87	32	56.5	4.23	
North Billerica	94	30	61.2	1.62	
Pittsfield	86	31	56.3	2.32	
Plymouth*[1]	86	44	59.8	2.73	
Provincetown	90	36	.....	3.47	
Roberts Dam	.....	.....	.....	2.07	
Roxbury	89	32	59.6	2.74	
Salem	.....	.....	.....	2.80	
Salisbury	.....	.....	.....	2.19	
Somerset	100	37	62.9	4.07	
Springfield Armory	92	33	60.6	1.91	
Taunton *c*	83[b]	24	57.4[b]	3.95	
Taunton *d*	95	31	61.2	.....	
Turners Falls	88	34	59.9	1.83	
Wakefield†	90	28	59.1	3.17	
Waltham	.....	.....	.....	2.03	
Webster	.....	.....	.....	2.40	
Westboro†	95	26	62.2	2.09	
Williamstown	86	31	58.2	2.10	
Winchendon	.....	.....	.....	1.93	
Winchester	.....	.....	.....	3.59	
Winthrop	101	30	60.0	3.37	
Worcester *a*	88[e]	29[e]	58.4[e]	2.18	
Worcester *b*	88	33	59.1	2.46	
Michigan.					
Adrian	97	28	59.8	3.25	
Albion	91	33	61.3	2.67	
Allegan	94	28	59.8	2.32	1.5
Alma	92	27	58.8	1.76	4.0
Alpena	.....	.....	.....	.....	5.0
Ann Arbor	91	32	59.2	3.52	T.
Arbela[2]	.....	.....	56.2	2.36	
Ball Mountain	92	27	57.6	3.15	
Battle Creek	95	30	60.2	2.03	0.7
Benton Harbor	95	29	57.2	.....	
Berlin*[1]	98	24	58.4	3.29	
Berrien Springs*[1]	100	35	61.2	2.50	T.
Birmingham	97	29	60.6	3.23	

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Michigan—Cont'd.	°	°	°	*Ins.*	*Ins.*
Bois Blanc *10	90	31	52.6	.....	
Boon	90	30	55.3	3.76	9.0
Bronson	90	29	59.8	2.07	1.5
Brown City	94	28	59.4	4.20	
Calumet	88	28	53.2	4.35	1.5
Charlevoix	93	29	55.8	2.00	
Cheboygan	88	26	53.4	4.39	2.0
Climax [2]	.....	.....	52.6	2.29	1.0
Clinton	95	29	60.1	2.65	
Crisps *10	90	28	54.0	.....	
Crystal Falls	95	22	55.4	6.75	
Escanaba †	79	26	52.2	7.73	
Fairview	90	31	60.0	2.38	0.2
Fitchburg	96	25	58.4	3.30	
Flint	97	23	57.0	1.91	
Gladwin	96	27	56.8	1.67	6.0
Grand Haven	.....	.....	.....	.....	T.
Grand Point au Sable *10	82	33	52.5	.....	
Grand Rapids	98	30	61.3	2.57	
Grape	92	29	58.6	2.53	
Grayling	98	20	55.4	2.77	16.0
Grindstone City *10	98	24	57.1	.....	
Hammonds Bay *10	90	30	52.2	.....	
Hanover	90	32	59.6	2.67	0.2
Harbor Springs [4]	90	26	54.3	.....	1.5
Harrisville	95	26	52.6	2.04	5.0
Hart	88	25	53.6	2.90	T.
Hastings	92	30	58.6	2.67	3.5
Hayes	91	28	56.4	3.08	
Hesperia	94	23	56.6	1.73	1.0
Highland Station	92	28	58.8	3.52	2.0
Holland *10	89	32	58.9	.....	
Howell	94	25	58.0	2.98	
Ivan	94	23	56.4	4.23	15.2
Jeddo	91	27	57.0	2.88	
Kalamazoo	93	31	60.4	3.52	0.2
Lansing	88	30	59.9	2.05	
Lathrop *1	88	23	54.1	6.54	2.5
Lewiston	96	25	59.3	1.88	7.0
Ludington *10	85	28	51.8	.....	
Madison	96	31	60.0	2.48	T.
Manistee *10	86	30	54.0	.....	
Marquette	.....	.....	.....	.....	T.
Mayville	93	28	59.2	2.03	T.
Middle Island *10	81	32	52.7	.....	
Montague *10	92	28	55.6	.....	
Mottville	96	28	60.6	2.35	
Muskallongee Lake *10	87	30	51.8	.....	
North Marshall	93	28	57.4	1.39	1.0
Northport	89	30	54.5	2.00	4.5
Old Mission	91	27	56.7	3.45	14.5
Ottawa Point *9	90	34	53.5	.....	
Ovid	95	29	59.6	2.05	
Parkville	.....	.....	.....	1.83	0.5
Pentwater *10	86	36	56.8	.....	
Point aux Barques *10	94	28	57.5	.....	
Point Betsey *10	82	34	53.1	.....	
Pontiac	93	29	58.8	3.78	
Port Huron	.....	.....	.....	.....	T.
Rockland	91	24	55.5	4.70	.....
Romeo	94	28	59.6	2.03	T.
St. Ignace	85	26	50.2	2.95	T.
St. Johns	95	30	60.6	1.92	
Sand Beach *a*	93	26	56.5	2.14	
Sand Beach *b* *10	90	30	58.4	.....	
Sault Ste. Marie	.....	.....	.....	.....	1.9
Ship Canal *10	98	33	54.3	.....	
Standish	94	28	62.1	0.62	3.5
Stanton	92	27	58.2	1.90	
Sturgeon Point *10	92	32	50.2	.....	
Thornville	95	30	60.8	3.74	
Thunder Bay Island *10	78	32	49.0	.....	
Two Heart River *10	90	22	52.6	.....	
Vandalia	92	33	60.6	1.61	
Vermillion Point *10	88	34	48.2	.....	
Ypsilanti	93	25	58.0	3.07	T.
Minnesota.					
Ada †	92	21	55.7	2.36	
Albert Lea †	92	30	58.3	4.70	
Alexandria *a* †	.....	.....	.....	1.80	
Beardsley †	89	27	56.6	2.40	
Belle Plaine *1	94	37	57.6	2.50	
Bingham Lake †	96	27	58.2	4.42	
Bird Island	88	26	57.6	3.56	
Blooming Prairie †	92	29	58.0	3.55	
Bonniwells Mills †	92	27	59.8	4.53	
Caledonia †	89	28	57.9	4.90	
Cambridge †	91	27	57.2	4.67	
Camden †	90	25	58.3	3.47	
Campbell	92	23	57.4	2.04	
Carver † [2]	.....	.....	54.3	2.87	
Clear Lake † [1]	87*	27	56.2	3.91	
Clear Water *1	90	32	56.4	3.23	
Collegeville	88[1]	30[1]	56.4[1]	2.28	
Crookston †	89	26	55.8	1.72	0.2
Dawson *1	89	26	54.0	2.63	
Duluth	.....	.....	.....	.....	T.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Minnesota—Cont'd.	°	°	°	*Ins.*	*Ins.*
Farmington †	92	27	57.2	3.24	
Fergus Falls †	85	31	56.8	3.10	T.
Fort Ripley †	.....	.....	.....	3.74	
Glencoe †	90	26	55.9	.....	
Grand Meadow †	93	25	58.4	4.88	
Grand Portage †	66	21	40.2	2.40	
Granite Falls	88	26	58.6	2.65	
Hutchinson †	94	30	58.6	4.40	
Koochiching †	88	19	53.4	3.55	
Lake Winnibigoshish *1	84	34	54.1	3.51	
Lawrence †	92	26	55.4	3.02	
Leech Lake [1]	86*	30	41.2	3.84	
Long Prairie †	90	24	55.2	3.05	
Luverne †	88	27	57.5	3.52	
Maple Plain	93	29	58.8	2.29	
Marfield †	85	21	52.3	6.09	2.0
Mazeppa [1]	92*	24	56.7	1.90	
Milan †	92	27	58.8	1.50	
Minneapolis *a* †	94	28	59.2	2.67	
Minneapolis *b* [1]	91*	29	58.0	2.83	
Minnesota City †	92	30	60.2	3.46	
Montevideo †	89	30	58.1	2.55	
Moorhead	.....	.....	.....	.....	T.
Morris †	91	31	58.7	1.74	
New London	88	28	58.1	2.23	
New Richland *1	90[4]	34[4]	59.4[4]	.....	
New Ulm †	92	36	62.8	2.86	
Park Rapids †	85	26	54.6	3.34	
Pine River *1	83	34	55.0	4.42	
Pleasant Mounds *† [1]	90	28	57.2	2.91	
Pokegama Falls [1]	85*	18	51.5	5.32	
Red Lake † [b]	83	26	49.2	3.05	
Red Wing †	.....	.....	.....	4.25	
Redwood Falls †	.....	.....	.....	2.86	
Rolling Green †	90	30	58.0	3.00	
Roseau [c]	78	26	52.8	1.70	T.
St. Charles †	94	28	59.3	4.46	
St. Cloud	85	30	55.8	3.99	
St. Olaf	85	34	57.6	2.33	
St. Peter †	94	27	59.7	4.12	
Sandy Lake Dam [1]	82*	13	54.6	4.59	
Sauk Center	87	28	55.8	2.81	
Shakopee [5]	88*	30	60.4	1.93	
Sunrise City *6	90	32	58.4	.....	
Two Harbors †	78	27	50.4	4.12	1.0
Wabasha *1	96	34	59.2	3.10	
Willmar †	86	28	56.8	4.58	
Winona	94	34	61.1	6.67	
Worthington	86	29	58.0	3.29	
Zumbrota *1	90	35	60.4	.....	
Mississippi.					
Aberdeen †	98	42	69.4	2.43	
Agricultural College	91	47	68.9	1.81	
Batesville †	92	40	69.2	1.74	
Bay St. Louis †	85	50	73.2	6.80	
Biloxi †	86	49	72.3	6.25	
Briers †	88	47	70.4	2.32	
Brookhaven †	96	42	73.1	5.41	
Canton †	88	48	70.0	2.10	
Columbus †	92	41	71.7	1.43	
Corinth †	93	30	63.8	3.58	
Crystal Springs †	92	46	70.4	4.33	
Duck Hill †	92	43	69.8	2.21	
Edwards	94	47	72.0	3.45	
Enterprise † [c]	92	43	71.4	5.23	
Fayette †	90	44	70.8	2.75	
French Camps †	91	41	67.7	2.93	
Fulton †	90	40	68.0	2.33	
Greenville *a*	94	48	71.1	1.38	
Greenville *b* †	93	39	70.2	1.32	
Hattiesburg †	92	39	70.4	3.76	
Hazlehurst †	93	43	71.8	3.78	
Hernando †	91	40	69.3	1.50	
Holly Springs †	94	45	68.8	1.38	
Itta Bena *† [1]	90	44	69.5	2.61	
Jackson †	94	44	71.8	2.90	
Kosciusko †	91	45	69.4	2.68	
Lake †	89	47	70.6	4.26	
Leaf *1	90	48	71.1	.....	
Leakesville †	93	45	72.8	3.33	
Logtown †	86	47	72.8	5.92	
Louisville †	93	40	68.2	2.26	
Macon †	98	44	72.1	1.45	
Magnolia †	88	49	72.0	7.36	
Mayersville	94	44	71.2	1.75	
Moss Point †	90	52	75.2	8.04	
Natchez †	92	45	71.4	1.88	
Okolona †	96	42	70.5	3.01	
Palo Alto †	96	47	71.0	1.32	
Pontotoc †	91	44	68.5	3.44	
Port Gibson †	92	44	71.6	3.28	
Rosedale †	.....	41	.....	2.93	
Stonington *1	90	50	72.2	.....	
Thornton †	92	52	71.4	2.85	
Topton *5	90	54	72.3	5.49	
University †	.....	.....	.....	1.22	
Water Valley *† [1]	95	43	68.4	2.76	

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Mississippi—Cont'd.	°	°	°	*Ins.*	*Ins.*
Waynesboro *a* †	96	43	72.2	4.35	
Waynesboro *b* †	96	48	72.4	5.66	
Woodville †	93	46	72.4	5.53	
Yazoo City †	98	45	73.2	2.61	
Missouri.					
Akron	.....	.....	.....	2.99	
Appleton City †	91	38	65.8	5.03	
Arlington †	.....	.....	.....	0.36	
Arthur *† [3]	.....	46	62.6	7.04	
Bagnell †	.....	.....	.....	4.74	
Bethany	94	33	64.4	3.69	
Big Piney	.....	.....	.....	1.25	
Birch Tree	87	36	64.4	2.30	
Bluffton *1	94	46	67.7	5.96	
Boonville †	.....	.....	.....	6.74	
Brunswick	92	38	66.5	1.00	
Carrollton †	90	37	65.0	4.97	
Carthage	.....	.....	.....	5.61	
Conception	90	40	64.6	2.06	
Cowgill *5	92	40	66.4	3.90	
Darksville †	103	35	67.3	5.88	
Downing	.....	.....	.....	3.69	
East Lynne *3	.....	36	61.0	7.02	
Edgehill *5	86	40	65.4	1.30	
Eight Mile *1	89	36	62.3	6.45	
Eldon *1	88	40	62.6	6.15	
Elmira	95	30	65.0	2.89	
Emma *3	.....	42	66.4	4.83	
Fairport	.....	.....	.....	2.55	
Farmersville	.....	.....	.....	3.34	
Fayette	90	36	65.2	4.32	
Fulton	.....	.....	.....	5.20	
Gallatin *1	91	40	64.3	5.24	
Gayoso *3	.....	40	64.6	3.24	
Glasgow	94	34	63.9	4.56	
Gordonville *3	84	37	62.8	2.19	
Gorin *3	91	36	62.6	5.65	
Grove Dale	.....	.....	.....	4.50	
Half Way	89	35	63.8	3.01	
Harrisonville †	93	39	65.6	8.49	
Hastain	95	36	66.2	4.62	
Hermann †	.....	.....	.....	5.58	
Houston	88	33	62.0	3.01	
Houstonia (near)	.....	.....	.....	4.55	
Humansville	94	34	65.0	3.93	
Ironton *† [1]	88	43	63.7	0.97	
Jefferson City †	95	37	66.6	6.98	
Kidder	94	34	64.6	3.75	
Lamar	89	37	65.4	4.89	
Lamonte	.....	.....	.....	4.86	
Langdon †	96	34	63.6	4.63	
Lebanon	89	39	64.2	6.13	
Lexington †	90	37	64.8	7.48	
Liberty	94	37	67.8	4.64	
Linn Creek	95	35	64.8	3.37	
Louisiana Bridge †	.....	.....	.....	3.76	
McCune *† [1]	93	32	65.8	5.64	
Marble Hill	.....	33	.....	1.17	
Marceline	.....	.....	.....	4.82	
Marshall †	94	34	65.4	4.48	
Maryville [4]	96*	35	60.2	2.89	
Mexico †	92	34	65.5	6.26	
Miami	.....	.....	.....	3.08	
Mine La Motte †	88	33	63.0	2.19	
Mount Vernon	90	35	61.4	6.02	
Neosho	93	36	67.1	7.51	
Nevada	.....	.....	.....	3.61	
New Haven *1	93	38	64.0	4.90	
New Madrid	95	40	69.2	4.08	T.
New Palestine	.....	.....	.....	5.29	
Oakfield †	92	35	65.6	3.96	
Oak Ridge *4	.....	43	66.3	0.85	
Olden †	87	37	65.0	3.37	
Oregon *a*	95	38	65.9	3.04	
Oregon *b*	96	37	65.1	3.08	
Osceola †	.....	.....	.....	5.55	
Oto	.....	.....	.....	3.61	
Palmyra *5	94	34	67.6	5.70	
Panacea	87	40	61.4	7.02	
Phillipsburg *† [1]	86	42	63.6	3.86	
Pickering *3	.....	28	59.3	3.23	
Pierce City *1	92	34	65.5	5.75	
Platte River *3	90	38	62.2	1.95	
Poplar Bluff	94	40	67.0	1.21	
Potosi	94	36	62.7	1.30	
Princeton *1	96	36	64.0	3.09	
St. Charles	90	35	64.7	3.63	
St. Joseph †	.....	.....	.....	1.72	
St. Louis	90	32	63.9	3.30	
Sarcoxie *3	95	40	65.2	4.06	
Shelbina	.....	.....	.....	4.30	
Sikeston	97	34	67.2	1.99	
Steffenville	.....	.....	.....	4.95	
Stellada †	95	37	63.5	7.81	
Sublett	91	30	62.6	3.10	
Tindall †	.....	.....	.....	3.22	
Trenton *3	.....	37	59.8	4.28	

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Missouri—Cont'd.	°	°	°	*Ins.*	*Ins.*
Unionville†	96	34	65.0	2.40	
Vermont*†[1]	90	39	63.2	6.08	
Versailles	.....	.....	.....	7.79	
Vilas	.....	.....	.....	2.47	
Virgil City	.....	.....	.....	4.97	
Warrensburg*[1]	90	46	64.9	3.45	
Warrenton	92	37	65.3	5.70	
Wheatland	.....	.....	.....	5.22	.
Willow Springs	89	36	64.6	3.69	
Montana.					
Billings†	86	32	58.4	0.55	T.
Boulder†	80	25	49.2	0.73	
Bozeman†	76	29	50.9	2.36	
Butte†	74	33	47.8	1.09	T.
Choteau†	88	22	52.2	0.42	T.
Cokedale†	76	25	49.6	1.10	3.5
Columbia Falls†	83	22	52.7	2.49	
Deer Lodge City†	82	19	48.8	0.64	T.
Fort Benton†	78	20	53.4	1.14	
Fort Custer†	84	28	54.1	0.50	
Fort Keogh†	84	32	54.3	1.50	
Fort Logan†	78	17	46.3	0.97	
Fort Missoula	80	25	50.3	1.06	T.
Glasgow†	85	27	54.2	1.18	
Glendive†	87	28	57.0	2.00	
Great Falls†	88	30	52.0	0.21	T.
Havre	.....	.....	.....	.....	T.
Helena	.....	.....	.....	.....	0.1
Hogan†	82	24	50.4	0.68	T.
Manhattan†	80	21	50.8	1.14	T.
Martinsdale†	84	21	51.1	0.38	T.
Marysville†	76	27	48.0	1.48	2.2
Musselshell†	94	19	53.0	...	.....
Pony†	76	33	55.2	0.91	1.1
Poplar†	82	34	52.6	0.69	
Radersburg†	.....	.....	.....	0.42	
Sun River†	82	30	52.0	0.53	
Troy†	92	28	57.4	2.53	
Utica†	81	30	51.8	0.39	
Virginia City†	76	24	49.0	1.42	2.0
White Sulphur Springs†	73	27	49.6	0.45	
Wibaux†	85	30	54.7	1.74	T.
Yale†	81	22	50.0	0.59	T.
Nebraska.					
Agee*[1]	98	39	60.0	2.02	T.
Albion†	97	27	60.4	3.78	
Alma	.....	.....	.....	5.06	
Ansley†	99	29	59.4	2.59	
Arborville*[1]	106	28	63.7	2.37	
Ashland *a*†	99	33	63.8	2.62	
Ashland *b**[1]	100	41	67.1	1.91	
Ashton	100	31	62.0	2.50	
Auburn*†[1]	102	32	64.3	2.26	
Aurora*[1]	104	38	62.7	2.79	
Beatrice*†[2]	99	.....	58.9	2.59	
Beaver City	109	29	62.8	4.11	
Benkelman*[1]	98	36	63.6	2.55	
Blue Hill*[1]	101	33	64.6	1.77	
Bratton*[1]	96	38	63.4	3.14	
Broken Bow*[1]	110	40	65.1	2.30	
Burchard*[1]	90	45	67.2	1.96	
Burwell*[1]	94	36	63.9	2.09	
Callaway†	96	30	59.3	2.35	
Central City*[5]	96	46	67.2	2.88	
Chester*[1]	100	32	64.1	0.97	
Columbus†	97	32	62.5	1.87	
Cornlea	.....	.....	.....	3.02	
Cortland*[1]	99	42	62.8	2.23	
Crete	98	32	62.7	1.88	
Culbertson	.....	.....	.....	2.09	
Curtis *a*†	102	30	63.8	3.51	
Curtis *b*[1]	105	37	63.7	2.68	
David City*†[1]	100	36	62.4	2.15	
Divide*[1]	98	36	63.0	2.99	
Dunning*[1]	95	38	61.9	2.18	
Edgar*[1]	100	36	66.2	1.15	
Elba	.....	.....	.....	2.38	
Elwood	.....	.....	.....	3.02	
Ericson*†[1]	102	45	63.9	3.77	
Ewing†	.....	.....	.....	3.82	
Fairmont*[1]	100	42	65.6	1.01	
Fontanelle	99	32	63.0	0.98	
Fort Robinson	96	28	50.4	2.36	
Franklin†	104	28	64.2	2.34	
Geneva†	102	30	64.3	1.47	
Genoa†	101	36	63.4	3.82	
Gering†	95	32	57.0	2.12	
Gibbon	98	29	64.1	3.40	
Glenwood*[3]	94	30	54.5	4.98	
Gothenburg	101	34	62.2	2.20	
Grand Island*[1]	102	42	65.9	7.16	
Greeley*[1]	100	38	65.2	3.50	
Haigler*[1]	102	32	62.8	2.60	
Hartington†	93	27	60.3	2.38	
Harvard*[1]	103	43	64.3	1.41	
Hastings*[1]	96	35	59.9	2.13	
Hayes Center†	.....	.....	.....	2.43	

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Nebraska—Cont'd.	°	°	°	*Ins.*	*Ins.*
Hay Springs†	93	30	53.9	1.96	T.
Hebron†	101	28	64.4	1.08	
Hickman*[1]	98	38	63.9	1.73	
Holdredge *a*[2]*	.....	44	64.3	3.92	
Imperial *a*†	99	27	59.9	2.50	
Indianola*[5]	100	35	64.4	0.65	
Kearney*[1]	100	42	64.8	2.55	
Kennedy†[1]	97	26[b]	56.5	1.73	
Kimball†	92	28	55.2	1.70	
Lexington†	98	23	54.6	2.71	
Lodge Pole†	98	25	56.0	1.61	
Lynch*†[1]	94	36	62.1	2.22	
McCook*[1]	101	38	65.0	2.83	
Madison*[1]	92[c]	43	62.0	2.28	
Madrid*†[5]	97	30	59.8	3.11	
Marquette*	104	38	.....	3.57	
Mason City	.....	.....	.....	2.93	
Minden*[1]	101	28	62.0	5.14	
Nebraska City *a*†[1]	93	37	61.1	1.47	
Nebraska City *b*[1]	98	38	64.3	1.55	
Nemaha City*[1]	98	40	64.0	4.92	
Nesbit†	98	37	63.8	2.51	
Norfolk†	90	31	61.0	3.43	
North Loup†	100	29	61.0	3.09	
Oakdale†	97	29	59.9	3.62	
Odell*[5]	96	42	66.2	1.00	
Omaha*[1]	96	45	64.3	1.38	
O'Neill*[1]	96	36	60.4	2.29	
Ough†	.....	.....	.....	3.27	
Palmer *a*[1]	104	30	60.9	4.40	
Palmer *b*	.....	.....	.....	5.51	
Plattsmouth *a*†	.....	.....	.....	1.54	
Plattsmouth *b*[1]	98	44	62.0	1.53	
Ravenna *a*	100	29	61.0	2.05	
Ravenna *b*[1]	93	37	58.0	2.17	
Red Cloud *a*	.....	.....	.....	1.10	
Red Cloud *b*[1]	102	42	67.3	1.48	
Republican	.....	.....	.....	5.11	
Rulo*[1]	100	45	66.6	1.48	
Salem*[1]	94	36	64.0	3.35	
Santee Agency†	101	32	63.1	2.19	
Schuyler	.....	.....	.....	3.23	
Seneca*[1]	95	30	57.8	2.04	
Seward*[5]	100	43	69.4	1.49	
Spencer	.....	.....	.....	3.49	
Springfield	100	30	65.0	0.82	
Springview	99[c]	25[c]	59.4[c]	1.14	
Stanton*[1]	95	34	60.6	2.34	
State Farm	102	30	64.4	1.05	
Strang*[1]	102	42	69.6	2.58	
Superior*[5]	104	35	69.6	1.34	
Sutton	95	31	59.0	2.55	
Syracuse	.....	.....	.....	2.11	
Tecumseh†	97	31	63.5	2.21	
Tekamah	100	31	63.3	1.90	
Turlington†	100	35	64.6	1.27	
Wakefield	.....	.....	.....	2.08	
Wallace	.....	.....	.....	3.50	
Weeping Water*[1]	98	29	59.7	0.97	
Weston*[5]	102	44	69.4	1.34	
Whitman	.....	.....	.....	1.74	
Wilber*[1]	100	36	64.3	2.22	
Wilcox	.....	.....	.....	4.76	
Wilsonville*[1]	104	42	62.4	3.62	T.
York*[1]	102	34	65.4	1.97	
Nevada.					
Austin	81	25	52.0	2.66	6.0
Battle Mountain*[3]	85	42	61.6	0.50	
Belmont	80	26	51.0	0.86	6.0
Beowawe*[5]	89	37	58.5	0.00	
Candelaria	88	31	60.4	0.66	
Carlin*[3]	92	32	55.9	1.50	
Carson City	85	26	53.6	0.73	3.4
Clover Valley†	.....	.....	.....	0.52	1.0
Cortez†	.....	.....	.....	1.58	5.0
Cranes Ranch	.....	.....	.....	0.77	T.
Downeyville	97	32	65.2	1.80	T.
Elko*[3]	85	38	54.4	0.45	
Elko (near)	79	18	46.2	1.50	1.0
Ely	81	23	52.0	2.65	14.0
Empire Ranch†	90	27	60.7	0.38	3.5
Fenelon*[3]	76	30	51.6	0.47	
Genoa	76	30	51.0	0.50	0.2
Golconda*[1]	86	36	58.0	1.40	
Gold Hill	86	26	54.8	0.83	2.3
Halleck*[1]	82	34	48.9	0.61	
Hamilton	86	19	50.4	1.99	13.0
Hawthorne *a*[3]	82	38	59.9	0.40	
Hawthorne *b*	87	28	58.4	0.41	
Hot Springs*[1]	89	40	65.2	0.35	
Humboldt*[3]	90	34	62.0	1.45	
Lewers Ranch	81	27	53.4	1.56	6.0
Lovelock*[1]	92	45	64.9	0.60	
Marlette Lake†	.....	.....	.....	1.92	17.8
Mill City*[1]	89	38	54.9	.....	.....
Osceola†	84	26	55.2	0.45	.....
Palisade*[1]	90	38	58.9	0.00	

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Nevada—Cont'd.	°	°	°	*Ins.*	*Ins.*
Palmetto	82	24	53.0	1.30	2.0
Paradise Valley	90	26	55.6	1.10	T.
Reno*[3]	92	42	61.1	0.00	
Reno State University	84	28	53.9	0.57	T.
Ruby Valley†	.....	.....	.....	0.51	0.9
St. Clair	87	33	59.6	1.08	T.
St. Thomas	105	44	71.6	T.	
Stofiel	80	20	47.0	1.59	1.0
Sunnyside	90	20	55.7	1.21	
Tecoma*[3]	85	40	60.7	0.43	
Toano*[1]	82	25	53.5	0.23	2.0
Tybo	87	29	56.5	1.35	T.
Verdi*[3]	85	34	54.1	1.10	1.0
Wadsworth*[3]	89	33	59.7	1.06	
Wells*[3]	82	30	53.7	0.51	
Winnemucca	.....	.....	.....	.....	0.4
Yerington	85	25	56.4	0.14	
New Hampshire.					
Alstead*[6]	84	31	60.3	1.14	
Belmont	.....	.....	.....	2.01	
Berlin Mills	91	24	55.4	4.00	
Bethlehem	86	27	56.8	3.99	T.
Brookline*[1]	92	36	60.5	2.18	
Concord	91	31	60.3	2.12	
Grafton	.....	.....	.....	2.60	T.
Hanover	84	30	57.9	1.69	
Keene	91	24	57.6	1.76	
Lakeport	.....	.....	.....	2.05	
Lancaster	89	29	59.2	3.19	
Mine Falls	.....	.....	.....	2.40	
Nashua	94	27	60.0	3.12	
Newton	92	23	58.0	1.49	
North Conway	92	27	58.0	2.85	
Pennichuck Station	.....	.....	.....	2.92	
Peterboro	89	25	57.2	2.31	
Plymouth	95	25	57.6	2.46	
Sanbornton†	87	25	56.9	3.86	
Stratford	94	26	59.6	3.62	
Sugar Hill	84	30	56.0	.....	
Weirs Bridge	.....	.....	.....	1.98	
West Milan	90	21	53.2	3.76	
Wolfboro	.....	.....	.....	2.63	
New Jersey.					
Allaire	96	28	59.4	.....	
Asbury Park	96	35	59.0	2.00	
Barnegat	97	32	57.8	3.50	
Bayonne	98	37	60.8	2.71	
Beach Haven	93	40	57.2	3.70	
Belvidere	100	30	60.8	2.41	
Beverly†	97	35	62.6	2.35	
Billingsport	98	44	62.8	2.44	
Blairstown	102	35	65.2	2.16	
Boonton	97	32	61.4	3.51	
Bridgeton	95	42	63.5	3.07	
Camden	94	38	62.0	2.34	
Cape May	93	42	58.0	2.85	
Cape May C. H.†	92	39	58.6	3.31	
Charlotteburg	93	29	57.8	2.85	
Chester	92	32	59.0	3.55	
Deckertown	94	30	61.2	1.98	
Dover	99	29	59.8	2.66	
Egg Harbor City	96	35	60.1	3.43	
Elizabeth†	98	34	61.2	2.46	
Englewood	94	32	61.0	2.55	
Franklin Furnace	92	30	60.3	3.37	
Freehold	93	34	60.8	3.37	
Friesburg	.....	.....	.....	3.45	
Gillette	94	28	59.0	2.97	
Hammonton	.....	.....	.....	3.45	
Hanover	94	33	60.0	2.51	
Hightstown	96	35	63.3	2.87	
Imlaystown	96	37	62.6	3.25	
Junction	.....	.....	.....	2.14	
Lambertville	97	38	61.4	2.32	
Millville	99	38	63.4	3.41	
Moorestown	92	36	62.0	2.64	
Newark *a*	96	38	61.2	2.98	
Newark *b*†	97	38	61.4	2.84	
New Brunswick *a*	99	33	62.0	2.82	
New Brunswick *b*	94	34	59.7	2.83	
Newton	98	.....	.....	2.52	
Ocean City	93	38	57.0	3.14	
Oceanic	93	41	62.2	2.60	
Paterson	102	36	63.2	1.88	
Perth Amboy	97	37	60.4	2.75	
Plainfield	97	32	61.3	2.76	
Pochunk Mountain	94	32	61.2	3.53	
Rancocas*	95	38	.....	2.37	
Readington*[6]	98	42	65.8	.....	
River Vale	95	28	59.6	1.66	
Salem	96	37	62.6	3.58	
Somerville	99	33	62.4	3.22	
South Orange	94	36	60.2	2.99	
Toms River	95	32	59.9	2.91	
Trenton	95	36	63.6	2.81	
Vineland	98	35	63.1	3.95	
Woodbine	96	33	59.8	3.42	

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
New Mexico.	°	°	°	*Ins.*	*Ins.*
Albert†	97	37	63.5	3.79	
Albuquerque†	91	36	62.1	1.73	
Alma†	94	33	62.4	0.49	
Aztec†	90	30	58.8	1.03	
Chama†	83	27	52.4	2.28	12.0
Deming*[2]	87	52	71.2	0.58	
East Las Vegas†	85	33	55.6	4.02	2.0
Eddy†	97	46	70.4	2.11	
Engle†	100	39	67.2	0.10	
Espanola†	90	34	59.0	2.10	
Estalina Springs†	90	30	56.8[a]	1.98	3.0
Fort Bayard	93	33	61.2	0.80	
Fort Stanton†	90	35	58.6	1.06	
Fort Union†	87	32	55.6	3.34	2.0
Fort Wingate	87	32	56.4	1.80	8.0
Galisteo†	98	34	60.3	2.31	
Gallinas Spring†	95	35	64.5	4.29	
Gila	98	39	67.3	0.38	
Lordsburg*[2]	87	54	72.2	0.40	
Los Lunas†	93	37	64.1	2.50	
Monero†	81	27	50.5	4.37	
Ocate†	88	30	54.0	6.03	15.0
Olio†	92	30	61.6	0.51	
Puerto de Luna†	102	45	70.1	3.41	
Raton†	84	32	57.3	2.65	5.0
Rincon†	103	38	68.8	0.52	
Roswell†	99	38	68.6	2.31	
San Marcial†	91	39	64.7	1.35	
Santa Fe					3.0
Socorro†	91	41	66.8	1.13	
Springer†	84	32	58.9	3.00	6.0
Taos†	90	30	57.4	3.60	2.0
New York.					
Addison	94	27	59.4	2.11	
Akron				1.89	
Alfred Center	90	24	58.8	2.90	0.5
Angelica†	91	22	56.8	2.01	T.
Appleton	94	30	56.5	2.23	T.
Arcade	88	23	56.4	1.90	T.
Arkwright	84	28	56.6		
Atlanta				2.20	
Baldwinsville	91	35	61.4	2.39	
Bedford	94	29	59.4	1.82	
Big Sandy*[10]	86	32	56.7		
Binghamton†	91	28	58.6	2.92	T.
Bovina Center				2.32	
Brentwood	93	20	56.9	3.70	
Brookfield	90	26	58.7	2.76	T.
Brooklyn	95	38	62.4	2.54	T.
Buffalo					0.5
Canton†	93	27	58.3	1.67	
Charlotte*[10]	87	34	54.0		
Cherry Creek				2.58	
Cooperstown†	87	28	55.1	2.44	
Cortland	86	32	58.8	2.60	
De Kalb Junction				2.36	
Demster				3.04	
Deposit				2.60	
Elmira†	95	36	64.2	3.03	
Fleming	89	32	60.2	3.50	
Fort Niagara†	93	31	56.8	2.50	
Friendship	94	28	57.7	2.39	T.
Fulton				2.32	
Glens Falls	91	28	60.4	1.51	
Gloversville	92	28	58.6	2.05	
Hamilton	89	25	57.1	2.50	T.
Honeymead Brook	90	28	59.0	2.39	
Ithaca	90	31	58.8	3.60	
Jamestown*[6]	89	33	58.6		
Kings Station				2.26	
Lebanon Springs	89	26	57.7	2.03	
Le Roy	92	30	59.5	3.05	0.5
Lowville	89	26	57.6	2.25	
Lyons	91	33	60.3	3.25	
Madison Barracks†	88	30	57.8	2.66	
Malone	86	27	57.8	2.82	T.
Manhattan Beach†	79	37	54.4	2.22	
Massena	89	29	60.1		
Minnewaska	87	30	58.1	3.70	
Mount Morris	95	28	60.9	1.48	
Newark Valley				3.23	
New Lisbon	88	22	55.2	2.50	T.
North Hammond†	90	30	59.2	1.41	
Number Four†	87	34	55.0	3.17	T.
Ogdensburg	85	33	58.0	3.11	
Oneonta	92	28	60.0	2.23	
Oxford	94	25	58.4	2.78	
Palermo†	91	26	59.2	2.90	
Perry City	93	27	59.2	2.49	
Pine City				3.01	
Plattsburg Barracks	84	30	56.6	1.97	
Port Jervis	94	31	61.2	3.04	
Potsdam	88	26	59.0	2.60	
Poughkeepsie	94	29	59.3	1.99	
Rome	90	30	58.5	2.61	
Romulus	93	31	60.8	3.40	
Rose†				3.20	
New York—Cont'd.					
Saranac Lake	91	25	57.3	4.34	T.
Saratoga Springs	94	33	61.6		
Scottsville				3.25	
Setauket†	89	36	58.5	2.09	
Skaneateles				2.58	
South Canisteo	91	24	57.7	2.79	T.
South Kortright†	89	30	56.0	2.10	
Stillwater	97	33	62.0	1.42	
Turin	85	29	56.1	3.32	T.
Varysburg	95	25	59.2	1.88	
Wappingers Falls	95	34	61.6	3.88	
Warwick				3.16	
Watertown	90	28	59.6	2.80	
Waverly†	93	34	59.5	2.89	
Wedgwood	92	27	58.9	2.71	T.
West Chazy				3.54	
West Point†	92	35	55.9	3.55	
Willets Point	93	39	62.5	2.77	
North Carolina.					
Armour				2.77	
Asheville†	91	30	61.7	4.90	
Bailey*[3]	98	42	69.3	4.93	
Blowing Rock†	78	29	53.8	1.82	T.
Bryson City†				5.08	
Chapel Hill†	98	38	65.1	3.99	
Currituck Inlet†				2.40	
Experimental Farm	98	41	65.8	4.11	
Fair Bluff†				4.67	
Falkland*[1]	95	43	64.4	5.80	
Fayetteville†	96	43	66.4	4.12	
Flat Rock	90	30	59.8	6.69	
Goldsboro†	98	43	67.6	4.11	
Greensboro†	93	40	63.2	4.00	
Greenville				6.14	
Henderson†	98	39	64.7	3.12	
Highlands	84	27	56.8	6.94	T.
Horse Cove†	88	33	60.5	6.91	
Lenoir*[1]	90	45	64.1	5.13	
Linville†	83	29	54.4	7.79	
Littleton†	99	37	64.4	2.74	
Louisburg†	98	40		1.97	
Lumberton†	98	43	69.0	3.96	
Lynn*[3]	93		63.0	6.70	
Mocksville†	93	40	63.9	4.30	
Moncure†	96	38	64.7	2.95	
Morganton*[1]	93	45	64.4	3.72	
Mount Airy†	94	36	62.2	3.67	
Mount Pleasant	97	36	65.0	2.93	
Murphy†				5.24	
Newbern†	96	42	68.0	4.67	
Oak Ridge†	95	38	63.6	6.29	
Pantego				2.82	
Pittsboro	93	37	61.8	2.71	
Raleigh*[1]	102	40	66.2	3.10	
Rockingham†	96	38	67.9	2.58	
Roxboro†	95	37	63.9	3.77	
Rutherfordton†	87	33	61.6	5.96	
Salisbury	95	45	67.0	6.83	
Saxon†	99	35	63.7	4.57	
Selma	99	38	65.4	3.75	
Shelby†	94	37	63.6	8.13	
Skyuka	84	36	59.1	4.77	
Sloan†	97	39	67.2	3.45	
Soapstone Mount†	97	35	63.4	3.08	
Southern Pines†	98	41	67.0	2.07	
Southport†	88	43	67.6	6.86	
Waynesville†	89	30	60.3	5.97	
Weldon†	97	40	65.0	4.13	
Willeyton	98	40	65.0	6.03	
North Dakota.					
Ashley†	88	18	54.8	2.92	
Berlin†	90	18	55.4	2.00	T.
Bismarck					T.
Bottineau†	74	28	51.9	3.63	T.
Churchs Ferry	82	23	53.8	2.35	4.0
Dickinson†	77	19	52.0	1.09	
Ellendale	100	25	59.0	2.14	T.
Fargo†	91	30	55.2	1.62	
Forman†	91	19	55.0	2.58	
Fort Berthold†	82	25	57.4	2.76	
Fort Yates†	87	31	60.3	1.70	
Gallatin†	85	22	53.4	3.02	0.5
Grafton†	82			0.90	4.0
Jamestown†	81[b]	31[b]	54.5[b]	1.52	
Kelso†	91	22	56.2	2.41	
Larimore†				2.24	
Lemert†[4]	83	24	55.6	2.35	
McKinney	80	25	52.2	3.56	
Milton†	85	23	52.6	3.97	3.0
Minto†	88	22	57.4	1.91	
Napoleon†	83	23	53.7	2.82	
New England City†	76	18	49.8	2.30	
Oakdale†	74	25	51.4	2.37	
Portal†	88	30	51.5	2.81	
Power†	90	26	57.0	1.04	
St. John†	76	25	50.5	4.22	1.0
Sheyenne	86	26	54.2	2.25	
North Dakota—Cont'd.					
Steele†	81	23	53.8	1.97	T.
University†	85	28	55.6	1.94	0.5
Wahpeton†	90	28	58.2	1.63	
Washburn	82	28	53.8	3.30	
White Earth	80	15	49.8	3.62	
Wild Rice†[2]			55.8	1.61	
Willow City†	85	24	52.6	3.37	
Woodbridge†	82	24	51.4	3.15	1.6
Ohio.					
Akron	94	31	61.1	1.74	
Annapolis	98	24	60.3	1.65	
Arcanum				1.38	
Ashland	92	29	60.5	2.06	T.
Ashtabula	88	30	58.9	2.40	
Athens	94	30	61.8	2.07	T.
Atwater				2.25	
Auburn	91	20	57.6	2.43	
Bangorville	93	31	60.7	2.14	T.
Bellefontaine	94	32	60.4	0.95	0.3
Bement[1]	90*	24	57.3	3.69	
Benton Ridge	98	27	61.4	2.59	0.2
Berlin Heights	96	27	62.6	2.08	
Bethany	95	30	61.1	1.74	
Big Prairie	96	26	61.8	1.63	T.
Binola	94	35	64.1	3.68	
Bissells	92	26	60.1	1.61	T.
Bladensburg[b]	94	25	55.4	0.98	T.
Bloomingburg				1.15	T.
Bloomington				1.54	
Bowling Green	97	29	60.8	2.25	
Bucyrus	96	32	62.9	1.60	0.5
Caledonia†				1.42	
Cambridge	95	28	59.5	1.70	
Camp Dennison	95	31	63.1	1.75	
Canal Dover	97	26	60.1	1.62	T.
Canton†	94	30	61.1	1.78	T.
Cardington	95	24	59.0	1.67	0.1
Carrollton	98	25	61.4	1.71	
Cedarville				1.65	T.
Celina	94	32	63.3	2.02	
Cherry Fork	98	26	62.4	2.07	
Circleville*a*†				1.08	
Circleville*b*	97	31	62.9	1.14	T.
Clarksville	92	31	61.2	1.24	
Cleveland	90	32	59.8	2.15	
Clifton	96	26	61.5	2.11	T.
Coalton	97	25	60.4	1.53	T.
Colebrook	92	22	57.7	3.78	
Columbus					T.
Cynthiana	93	30	61.5	2.79	
Dayton*a*	97	33	63.5	1.78	
Dayton*b*†				1.51	
Defiance	98	29	62.6	2.21	
Demos	93	30	60.9	1.81	
Dupont	96	29	58.9	4.49	T.
Ellsworth	92*	26	59.7	1.67	T.
Elyria	99	29	62.5	4.38	
Fairport Harbor*[10]	89	36	56.5		
Fayetteville	93	30	61.9	1.90	
Findlay	97	29	60.3	1.55	T.
Fostoria	95	33	61.4	2.04	
Frankfort	95	31	62.1	1.54	
Garrettsville	93	24	57.8	2.64	T.
Granville	95	27	62.0	2.26	T.
Gratoit	94	28	60.7	1.32	0.1
Greenfield	95	32	61.8	1.15	T.
Greenhill	98	22	59.3	1.36	T.
Greenville	91	32	60.7	1.03	
Hackney	97	29	61.9	1.36	
Hanging Rock	95	30	61.3	2.28	
Hebbardsville	97	28	63.7	1.49	T.
Hedges	98	24	59.9	1.52	0.2
Hillhouse	91	24	58.9	2.46	
Hillsboro	99	27	61.1	1.02	T.
Hiram	92	27	59.0	2.00	T.
Jacksonboro	97	33	62.8	1.45	
Kenton†	95	30	62.0	2.01	
Kilbourne	92	29	59.0	1.95	T.
Killbuck	98	26	62.5	1.48	
Leipsic	98	28	60.5	1.23	T.
Levering	98	20	57.9	2.32	
Logan	100	29	63.2	1.39	T.
Lordstown	93	24	58.5	1.90	
Lowell	98	28	62.3	0.51	
McArthur	95	30	61.4	2.90	
McConnellsville	95	31	62.0	2.58	T.
Mansfield†				1.68	0.1
Marietta*a*†				1.61	
Marietta*b*	93	35	62.6	1.64	
Marion	97	28	61.9	1.53	T.
Medina	96	25	59.9	2.20	T.
Milfordton	96	25	59.6	1.45	T.
Milligan	102	27	61.5	1.91	T.
Montpelier	95	31	60.1	2.19	T.
Napoleon	98	32	61.6	2.20	T.
New Alexandria	92	30	62.3	1.43	
New Berlin	95	25	62.2	1.28	T.

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Ohio—Cont'd.	°	°	°	*Ins.*	*Ins.*
New Bremen	96	28	60.6	2.65	
New Comerstown	96	28	60.5	1.18	T.
New Holland	99	28	62.2	0.89	0.5
New Moscow				1.67	
New Paris	93	35	61.1	3.20	
New Waterford				1.44	
North Lewisburg	96	28	60.2	2.10	
North Royalton	94	28	60.7	2.25	
Norwalk	98	19	59.7	1.40	
Oberlin	95	27	60.4	2.02	
Ohio State University	96	29	61.0	1.55	T.
Orangeville	93	25	59.0	1.80	
Ottawa	96	29	60.8	1.51	
Pataskala	97	26	60.5	1.53	T.
Peoli	97	29	61.5	2.15	
Plattsburg	92	31	61.2	1.93	T.
Point Marblehead *[b]	88	40	61.4		
Pomeroy				0.88	T.
Portsmouth *a* †				1.91	
Portsmouth *b*	98	32	64.9	1.80	
Richwood				1.19	
Ridgeville Corners	94	30	60.0	2.67	
Ripley	92	32	62.2	1.82	
Rittman	94	22	57.3	0.97	
Rocky Ridge	98	32	62.2	1.27	
Rosewood	93	30	59.8	1.75	
Sharon Center	93			2.49	
Shenandoah	96	27	59.4	1.83	T.
Sidney *a* †				2.20	
Sidney *b*	95	30	61.9	1.70	T.
Springboro				1.63	
Stoutsville				1.65	T.
Sylvania	95	26	58.8	3.01	
Thurman	98	29	63.1	1.10	
Tiffin †	94	32	61.4	1.33	T.
Toledo					T.
Upper Sandusky	94	28	61.4	1.12	
Vanceburg	94	32	62.6	2.18	
Van Wert	97	25	60.9	1.35	T.
Vermilion	94	28	60.0	1.50	
Vickery	93	33	59.5	1.80	T.
Walnut				1.83	
Warren	97	24	60.5	2.50	
Warsaw	102	24	60.0	1.74	T.
Wauseon	96	29	60.6	2.75	0.8
Waverly	98	29	63.8	2.47	T.
Waynesville				1.57	
Wellington	92	25	60.1	2.31	
Westerville	94	32	60.6	1.74	
Wheeler †				1.85	
Willoughby				1.16	
Wooster *a*	94	27	59.4	1.38	T.
Wooster *b* †				1.18	
Youngstown	96	29	60.6	1.22	
Zanesville †				0.84	
Oklahoma.					
Alva †	95	36	67.5	1.55	
Anadarko †	100	38	72.4	0.95	
Arapaho †	98	37	69.4	1.74	
Britton †				0.89	
Buffalo †	98	36	72.5	4.05	
Burnett †	93	35	65.5	1.44	
Clifton †	99	34	70.6	0.67	
Enid †				2.43	
Fort Reno †	95	42	64.3	0.94	
Fort Sill	95	43	70.7	2.92	
Guthrie †	98	40	72.2	0.79	
Hennessey †	95[1]	44[1]	74.2[1]	1.26	
Keokuk Falls †	98	43	69.1	2.86	
Mangum †	98	40	71.0	1.14	
Norman †	100	36	73.0	1.78	
Ponca †	98	40	70.6	2.40	
Pond Creek †	100	34	69.8	1.18	
Sac and Fox Agency †	96	36	68.7	2.30	
Stillwater †	97	39	69.4	2.27	
Winnview †	99	40	70.6	2.79	
Oregon.					
Albany *a* †	92	32	56.1	4.87	
Arlington †	87	35	58.7	0.61	
Ashland *b*	93	29	53.5	1.30	
Aurora *[6]	92	40	60.1	4.79	
Aurora (near)	88	31	54.5	5.80	
Bandon	68	43	54.4	11.15	
Beulah †	87	24	54.2	1.37	
Brownsville *[6]	96	40	58.2	4.16	
Burns †	84	10	44.0		
Canyon City †	93	33	56.0	1.75	
Comstock *[6]	91	38	56.3	5.89	
Condon	90	25	53.8	1.58	
Corvallis *a*	89	31	53.9	4.36	
Corvallis (near)	88	32	56.2	5.25	
Crook	92	12	49.8	0.78	
Detroit †	94	35	53.6	8.59	
East Portland *	80	34		4.30	
Eugene †	87	36	55.2	3.98	
Fife †	81	20	45.2	1.13	
Forest Grove	87	29	54.8	4.42	

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Oregon—Cont'd.	°	°	°	*Ins.*	*Ins.*
Gardiner	84	38	53.8	10.30	
Glenora	85	29	51.2	13.14	
Grants Pass *a* †	94	29	56.8	2.91	
Happy Valley †	84	22	50.0	1.87	
Heppner †	85[c]	34[c]	52.3[c]	1.92	
Hood River (near)	81	34	52.2	3.33	
Hubbard	86	31	55.2	5.17	
Jacksonville	88	31	55.9	2.16	
Joseph †	78	28	48.6	2.16	0.2
Junction City *[6]	90	34	56.2	2.57	
Klamath Falls	92	23	53.8	1.77	0.5
Lafayette *[6]	89	42	60.1	4.18	
La Grande †	83	28	52.6	2.17	
Lakeview †		25		1.33	
Langlois	81	34	54.6	12.73	
Lone Rock	84	22	47.5	2.81	
Lorella	98	20	54.0	2.27	3.0
McMinnville *a* †	88	32	55.1	4.01	
McMinnville *b* *[6]	88	42	54.6	3.70	
Merlin *[6]	94	40	58.9	2.88	
Monmouth *[6]	88	46	59.7	4.59	
Mount Angel †	94	34	56.5	5.24	
Nehalem				11.64	
New Bridge	87	29	57.0	0.30	
Newport	74	37	51.6	9.97	
Pendleton	94	34	57.8	1.68	
Riddles *[6]	86	32	54.1	2.30	
Salem *a* *[6]	88	45	61.7	4.21	
Salem *b* †	88	32	54.9	6.23	
Salmon	80	28	45.2		24.0
Sheridan *[6]	83	45	57.9	3.19	
Silverton *[6]	84	34	55.9	5.33	
Siskiyou *[6]	92	38	57.1	0.40	
Sparta	77	27	49.7	2.79	
Springbrook	88	34	55.2	4.64	
Springfield *[6]	85	39	56.7	3.08	
The Dalles †	89	38	58.3	0.94	
Tillamook Rock L. H. †				5.46	
Toledo	92	32	52.1	9.56	
Umatilla †				0.64	
Vale	89	37	56.0	1.51	
West Fork *[6]	100	40	57.0	3.71	
Weston	86	33	54.8	1.83	
Williams	89	30	55.3	3.04	
Pennsylvania.					
Altoona	95	37	65.0	0.80	
Aqueduct	101	31	63.2	2.06	
Beaver Dam †				1.19	
Bethlehem				2.33	
Blooming Grove *[1]	94	36	60.0	2.74	
Brookville †				1.71	
Browers Lock				3.17	
Carlisle	100	32	61.9	2.34	
Cassandra	88	31	59.5	4.66	T.
Chambersburg †	96	30	60.0	2.39	
Clarion †				2.28	
Coatesville	95	30	61.4	3.65	
Confluence †				1.94	
Coopersburg	89	35	60.7	3.08	
Davis Island Dam †				2.24	
Doylestown				2.64	
Drifton	93[e]	29[e]	57.8[e]	2.03	
Dubois †				2.24	
Duncannon				1.99	
Dyberry †	90	24	56.8	2.52	T.
East Mauch Chunk	97	28	60.8	2.98	
Easton	93	33	61.4	2.58	
Edinboro *[1]	89	26	58.0		
Ellwood Junction †				1.75	
Emporium	98	27	60.0	3.08	T.
Erie					T.
Forks of Neshaminy *[1]	92[d]	44[d]	60.7[d]	2.80	
Frederick				3.76	
Freeport †				2.39	
Gettysburg †	94	35	60.9	3.16	
Girardville				3.33	
Grampian	94	26	59.6	2.38	
Greensboro †				1.55	
Greenville	94	25	58.6	2.75	
Hamburg	96	33	62.2	3.23	
Hollidaysburg	100	25	61.8	2.39	
Honesdale	91	28	58.6	2.89	
Huntingdon *a* †	98	25	61.3	3.01	
Huntingdon *b*				2.44	
Johnstown †	94	30	61.6	2.83	T.
Kennett Square	93	34	61.2	3.30	
Lancaster	92	36	61.2	3.01	
Lansdale				2.28	
Lebanon	96	32	61.0	1.85	
Le Roy †	91	28	59.0	3.24	
Lewisburg	99	30	61.2	3.66	
Lock Haven † [1]	102	30*	63.2	2.35	
Lock No. 4 †				1.71	
Lycippus	92	37	63.6	1.34	
Mahoning †				2.28	
Mifflin				1.87	
Oil City †				4.22	

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
Pennsylvania—Cont'd.	°	°	°	*Ins.*	*Ins.*
Ottsville				2.73	
Parker †				2.33	
Philadelphia *a*				2.17	
Philadelphia *b*	96	40	62.9	2.03	
Phœnixville		35		3.44	
Pittsburg					T.
Point Pleasant				2.78	
Pottstown	97	36	63.6	3.89	
Quakertown	94	30	59.5	3.60	
Reading [2]			61.8	2.41	
Ridgway †				2.51	
Saegerstown	94	24	58.7	3.60	T.
Salem Corners	96	30	59.8	2.87	T.
Saltsburg †				2.10	
Seisholtzville				3.15	
Selinsgrove	96	29	61.2	3.26	
Shinglehouse	93	23	56.6	2.65	
Smethport	94	22	56.9	2.12	
Smiths Corners				2.85	
Somerset	92	25	57.2	1.88	1.0
South Bethlehem	97	36	62.6		
South Eaton	90	30	59.9	3.40	
Spruce Creek				1.91	
State College	93	31	59.3	2.21	
Stoyestown †				1.70	0.5
Swarthmore				2.04	
Towanda	93	28	59.6	2.56	
Uniontown	90	29	59.2	2.07	
Warren †				2.36	
Wellsboro *† [1]	92	24	55.8	6.44	
West Chester	92	38	61.4	3.30	
West Newton †				2.11	
Westtown	92	34	59.9	3.34	
White Haven	91	26	57.6	2.75	
Wilkesbarre †	97	30	62.4	4.16	
Williamsport	96	33	61.5	3.37	
York †	95	34	61.4	2.73	
Rhode Island.					
Bristol	88	33	55.8	4.11	
Kingston	91	30	55.8	4.28	
Lonsdale				3.02	
Pawtucket	89	35	59.3	3.21	
Providence *a*	92	34	62.0	3.88	
Providence *c*	90	30	58.7	3.81	
South Carolina.					
Allendale †	94	44	70.2	5.72	
Anderson †				4.77	
Batesburg †	92	41	67.8	6.18	
Blackville †	98	42	70.2	4.22	
Camden †				3.05	
Central †	96	40	71.4	4.74	
Cheraw *a* †	98	37	68.0	2.70	
Cheraw *b* †				3.76	
Conway †				5.57	
Darlington *[1]	98	49	69.4		
Edisto †				5.71	
Effingham †				3.51	
Florence †	99	45	69.4	4.44	
Georgetown †	93	47	68.9	5.25	
Gillisonville † [2]	97	38*	68.4	2.69	
Greenville †	91	38	66.8	3.34	
Greenwood †	96	42	68.6	9.94	
Hardeeville †	88	50	70.8	4.43	
Holland †	90[f]	34[f]	70.6[f]	3.22	
Kingstree *a* †	95	44	69.8	4.04	
Kingstree *b* †				5.39	
Little Mountain	98	42	69.1	4.49	
Longshore †	94	40	67.0	3.16	
McCormick *† [1]	101[a]	41*	69.4[a]		
Mount Carmel †				4.41	
Pinopolis *[1]	87	48	68.0	4.44	
Port Royal †	92	52	73.6	1.48	
Ridgeway †	90	44	66.0	3.62	
St. George †	94	46	70.1	5.75	
St. Matthews †	96	45	69.2	3.43	
St. Stephens †				5.01	
Santuck †	96	36	66.8	3.78	
Shaws Fork *[1]	96	46	70.5	4.60	
Society Hill †	94	42	66.2	1.93	
Spartanburg †	96	38	68.0	4.17	
Statesburg †	93	46	67.8	4.03	
Trenton	92	46	69.8	5.62	
Trial †	94	43	68.7	4.35	
Watts *[5]	93	41	68.7	4.55	
Yorkville	94	38	66.4	2.62	
South Dakota.					
Aberdeen †	90	25	57.6	4.17	
Alexandria †	97	22	57.2	2.18	
Ashcroft †	85	23	52.2	2.92	
Bowdle *† [1]	84	33	61.0	1.73	
Brookings †	89	29	57.0	3.50	
Buffalo Gap *[1]	94	38	58.0	3.55	
Castlewood †	95	23	58.1	3.55	T.
Cross †	87	22	49.4	3.42	1.8
De Smet †	90	18[1]	50.8*	2.46	
Farmingdale				2.67	
Faulkton †	94	20	57.3	2.00	

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.)			Precipitation.	
	Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.
South Dakota—Cont'd.	°	°	°	*Ins.*	*Ins.*
Flandreau†	92	29	57.8	6.65	
Forestburg†	98	22	59.0	1.04	
Gary†	90	31	57.0	2.68	
Greenwood	98	30	60.9	2.39	
Highmore†	97	24	57.0	1.66	
Hitchcock				1.27	
Hotch City†	97	24	58.6	0.86	T.
Howard†	91	24	56.8	2.76	
Ipswich*‡	92	22	55.8	3.32	
Kimball†	98	26	58.9	1.42	
Leslie†	100	25	59.8	0.16	
Millbank†	84	29	57.5	1.93	
Northville*‡	98	23	57.6	2.39	
Nowlin†	101	26	60.0	0.15	
Oelrichs†	96	28	54.8	3.72	
Parker†	93	26	57.7	2.30	
Parkston†	94[b]	20[b]	59.7[b]	1.74	
Plankinton†	94	28	58.2	1.49	
Rosebud†	97	29	57.6	1.38	
Shiloh†	95	20	57.0	1.11	
Silver City				4.95	3.0
Sioux Falls†	92	26	57.6	3.33	
Spearfish†	80	33	52.6	3.95	
Tyndall†	95	29	61.4	2.25	
Vermillion*	92	30	60.7	1.40	
Watertown†	88	21	56.2	2.09	
Webster†	92	23	56.4	2.22	T.
Wentworth†	90	27	57.0	3.61	
Wessington Springs†	96	32	59.1	1.65	
Yankton†	95	32	60.4	3.17	
Tennessee.					
Andersonville*‡	92	35	63.7	5.80	
Arlington†	96	42	67.9	2.27	
Ashwood*†‡	91	40	65.8	1.20	
Bolivar†	92	32	68.2	1.54	
Bristol†		30		3.22	
Brownsville†	97	42	70.7	2.12	
Byrdstown†	90	35	64.0	4.76	
Carthage†				2.43	
Clarksville	90	38	65.5	2.74	
Clinton†				3.50	
Columbia†				1.62	
Covington δ†	96	40	70.1	2.51	
Dyersburg†	94	39	69.3	2.78	
Elizabethton†	97	32	65.0	3.92	
Fairmount*‡	85	42	61.1		
Florence†	90	36	64.3	1.34	
Franklin†	91	32	64.4	3.11	
Greeneville†	90	31	61.8	3.77	
Hohenwald*†‡		44	62.8	2.58	
Jacksboro*[4]	89	35	60.2	4.30	
Jackson†	92	39	64.6	1.90	
Johnsonville†				1.93	
Loudon†				4.70	
Lynnville*	84	46		6.32	
McMinnville†	92	34	64.8	5.65	
Milan†	94	38	67.4	2.80	
Mount Carmel	89	43	67.0	4.68	
Newport*‡	91	35	61.2	5.03	
Nunnelly*‡	90	42	67.4	1.77	
Palmetto†				3.01	
Parksville*‡	91	38	65.3	3.90	
Riddleton†	93	35	66.0	1.01	
Rockwood†				3.06	
Rogersville*‡	89	35	61.7	3.09	
Rugby*‡	89	35	61.0	6.45	
Savannah*‡	90	50	68.9	1.22	
Sewanee†	83	38	62.0	2.83	
Trenton	91	37	65.8	1.83	
Tullahoma*†‡	87	32	62.8	2.45	
Waynesboro*‡	92	40	63.8	1.21	
Texas.					
Albany*†‡	81	50	68.0	0.89	
Arthur City†				5.29	
Aurora*‡	96	46	70.6	3.65	
Austin *a*†	93	55	77.6	14.10	
Austin *b*[2]	87	54	72.6		
Belton†[4]	98	49	76.3	5.09	
Boerne*†‡	89	49	71.5	6.30	
Brady†	89	40	69.2	6.45	
Brazoria†	86	50	73.4	8.66	
Brenham†	89	51	73.2	12.54	
Burnet*†‡	85	54	73.9	5.74	
Camp Eagle Pass†	97	59	76.4	4.80	
Chillicothe	97	43	73.4	3.00	
Coleman*[3]		52	67.4	5.92	
College Station	85	52	70.1	12.44	
Columbia†	89	50	74.5	7.47	
Corsicana *a*†	96	46	72.1	5.39	
Corsicana *b*†	92	50	71.1	6.89	
Cuero†	90	54	75.4	4.18	
Dallas†	92	42	71.9	7.53	
Dean†	94[b]	33[a]	64.9[a]	1.03	
Devine	89	47	71.8	4.90	
Durham†				2.09	
Duval*‡	92	55	74.7	9.80	
Estelle†	92	43	71.4	4.88	

Stations.	Temperature. (Fahrenheit.)			Precipitation.	
	Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.
Texas—Cont'd.	°	°	°	*Ins.*	*Ins.*
Flower Bluff†	84	62	76.0	6.41	
Forestburg†				4.03	
Fort Brown†	92	41	75.6	3.26	
Fort Clark	93	57	74.0	5.05	
Fort Hancock	104	36	68.0	1.42	
Fort McIntosh	99	60	78.6	2.72	
Fort Ringgold†	101	63	80.6	4.80	
Fort Worth	93	37	70.8	5.34	
Fredericksburg*†‡	88	43	68.9	8.64	
Gainesville†	89	44	69.5	5.58	
Golindo				12.00	
Graham†	95	37	70.0	3.11	
Grape Vine†	90	45	70.0	6.59	
Hale Center†	92	44	68.2	0.75	
Hallettsville†	90	48	74.2	11.50	
Happy†	95	31	64.6	1.27	
Haskell*†‡	86	50	70.0	1.99	
Hearne†	90	52	73.2	15.86	
Hewitt				7.83	
Houston†	88	50	71.8	8.76	
Huntsville†	88	50	72.2	13.06	
Kent				1.30	
Lampasas*‡	90	49	69.8	5.24	
Leakey†	87	54	72.7	5.40	
Llano*†‡	92	53	74.2	4.40	
Longview†	94	46	72.2	8.09	
Luling†	92	42	73.1	8.04	
McGregor†	84	47	69.6	7.50	
Marshall†	91	45	70.8	11.80	
Menardville*†‡	87	52	69.2	3.87	
Midland†	100	39	68.1	4.90	
Mount Blanco†	92	39	65.7	2.12	
New Braunfels†	89	48	71.1	7.51	
Orange†	87	46	72.8	1.90	
Panter*†‡	95	51	70.8	5.77	
Paris†	90	45	70.4	5.43	
Roby†	94			3.32	
Rockport*‡	88	60	76.6		
Rock Springs†		39		5.93	
Runge†	89	55	75.4	7.11	
San Antonio	90	51	73.8	6.75	
San Marcos *a*†				9.94	
San Marcos *b*†	90	53	75.0	10.55	
Sherman†‡	92	50	70.6	7.70	
Sierra Blanca†	96	45	72.1	0.00	
Stafford†	96	49	75.1	6.11	
Sulphur Springs†	101	39	72.0	8.73	
Temple†	87	51	70.8	4.94	
Tyler†	90	46	70.4	5.80	
Victoria†				8.26	
Waco†	89	48	73.4	10.38	
Weatherford†	90	45	70.2	5.57	
Wichita Falls†	97	47	69.3	0.99	
Utah.					
Blue Creek*‡	85	38	63.0	0.20	
Brigham City				2.10	
Cisco†	98	32	63.4	0.40	
Corinne*‡	85	45	67.5	1.60	
Fillmore†	94	19	56.0	1.51	
Fort Duchesne†	87	28	55.2	1.53	
Gilea†	97	30	62.4	0.10	
Green River†	94	37	62.8	0.50	
Grouse Creek*†‡	82	33	50.8	0.62	0.8
Grover†	87	21	50.8	1.22	10.2
Heber†	86	25	53.0	1.54	
Kelton*‡	84	45	62.5	0.00	
Koosharem	81	25	50.4	0.96	
Levan†	82	29	57.6	7.18	
Logan†	80	32	54.3	2.27	
Manti†	96	34	68.4	0.90	
Millville†				2.50	
Moab†	97	35	64.2	0.35	
Moroni†				0.91	
Mount Pleasant*†‡	86	35	53.4	1.20	3.0
Ogden *a*‡	82	38	60.0	2.35	
Ogden *b**†‡	79	41	62.4	1.80	
Pahreah†	94	40	61.8	1.30	
Parowan†	86	32	55.8	0.87	4.0
Promontory*‡	80	38	58.7	1.05	
Provo City†[2]			54.8[d]	2.27	
St. George†	90	36	66.1	0.54	
Salt Lake City					T.
Snowville†	81	26	53.6	1.32	
Soldier Summit†	82	20	48.2	0.62	3.0
Terrace*‡	82	38	62.5	4.00	
Thistle†	90	22	55.8	0.35	
Vernal†	82	30	55.0	1.51	
Vermont.					
Brattleboro	91	29	60.4	1.26	
Burlington†	88	33	61.5	3.79	
Cornwall	89[d]	28[d]	57.9[d]	4.10	
Enosburg Falls†	89	29	58.0	4.61	
Hartland†	92	23	57.0	1.61	
Irasburg†	88	25	55.0	3.90	
Jacksonville	86	23	54.4	1.24	
Norwich*‡	88*	32	57.9	1.98	
St. Johnsbury	86	30	58.2	3.15	

Stations.	Temperature. (Fahrenheit.)			Precipitation.	
	Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.
Vermont—Cont'd.	°	°	°	*Ins.*	*Ins.*
Simonsville	88	23	56.0	1.24	T.
Strafford*†‡	84	29	57.9	2.60	
Vernon*‡	94	28	59.2	1.25	
Wells	86	26	59.0	2.63	
Woodstock	93	25	59.3	2.46	
Virginia.					
Abingdon†				4.64	
Ashland†	94	37	62.9	9.18	
Avon†	96	34	62.6	5.71	
Bedford City†	91	39	65.5	4.35	
Big Stone Gap†	92	26	58.7	4.13	
Birdsnest*†‡	94	48	63.0	8.25	
Blacksburg	90	31	58.1	3.93	
Buchanan†				2.77	
Buckingham†				4.34	
Callaville†	94	38	63.3	3.14	
Cape Charles†	95	42	62.3	8.29	
Charlottesville	96	37	63.6	4.89	
Christiansburg†				2.48	
Clarksville†				3.52	
Dale Enterprise†	94	29	58.9	3.07	T.
Danville†				3.85	
Fredericksburg†	93	41	62.9	5.20	
Grahams Forge	96[d]	32[d]	62.2[d]	2.05	
Hampton	96	45	63.3		
Hot Springs	88	40	59.9		
Irwin†	97	37	62.4	3.93	
Lexington†	94	34	61.6	2.51	
Marion†	89	34	60.2[a]	4.03	
Monterey†	91	27	60.0	5.35	6.0
Nottoway	99	34	63.4	4.12	
Petersburg†	98	39	64.3	4.85	
Radford†				2.23	
Richmond (near)†	102	37	63.1	5.05	
Richmond δ†				5.11	
Rockymount†	96	39	63.6	4.87	
Salem†	91	39	63.0	3.67	
Saltville	90	33	60.4	3.70	
Smithville†	98	39	63.7	3.16	
Spottsville†	97	37	62.9	5.05	
Stanardsville†	95	35	61.7	4.74	
Staunton†	94	33	60.9	3.87	
Stephens City†	97	35	62.8	3.66	
Sunbeam†	95	40	63.9	5.62	
Warsaw†	95	36	62.7	4.95	
Westbrook Farm	96	39	63.2		
Washington.					
Aberdeen†‡	91*	36	51.6	7.27	
Ashford				6.55	
Blaine†	79	30	53.2	3.53	
Bridgeport†	92	29	56.8	0.95	
Cascade Tunnel†	75	28	45.2	6.52	0.6
Centerville†	86	32	55.0	0.98	
Colfax†	84	31	53.8	1.63	
East Sound†	75	37	53.2	1.91	
Ellensburg†	83	30	53.2	0.62	
Ellensburg (near)	88	32	55.4	0.07	
Ferry†	92	35	54.8	7.44	T.
Fort Simcoe	85	32	56.7	0.67	
Fort Spokane	90	33	56.0	0.76	
Grand Mound†	88	33	53.8	5.59	
Hunters†	77	20	48.6	3.66	
Kennewick†	89	38	63.5	0.54	
Lakeside†	83	34	56.3	0.65	
Lapush†	82	37	52.2	5.49	
Madrone*†‡	82	35	52.9	5.64	
Monte Cristo†	82	32	47.4	11.74	8.5
Moxee Valley†	87	30	57.0	0.45	
Olga†	80	41	53.8	1.56	
Pine Hill†	85	34	55.1	2.25	
Pomeroy†	82	28	55.9	1.55	
Pullman†	82	31	51.4	2.12	
Rosalia†	84	30	51.8	2.22	T.
Silver Creek*‡	88	32	50.9	7.13	
Snohomish†	89	35	55.0	5.81	
South Bend†	86	34	54.4	8.29	
Stampede†	78	30	47.7	4.50	3.0
Stillaguamish†	88	32	53.2	4.72	
Sunnyside†	89	29	58.7	0.72	
Tacoma†	89[c]	36[d]	52.9[c]	4.61	
Union City†	88	32	54.2	7.34	
Vashon†	86	25	49.0	4.08	
Waterville†	84	28	51.8	1.04	
Wenatchee Lake†	88	29	50.5		
West Ferndale†	86	34	54.4	2.67	
West Virginia.					
Beverly†	90	32	62.2	4.27	4.0
Bloomery†	92[d]	28[d]	56.8[d]	2.82	
Bluefield†	95	30	60.9	3.90	T.
Buckhannon *a*†				2.19	T.
Burlington†	94	27	59.9	1.25	T.
Central Station*†‡	96[c]	32	59.9[c]	0.79	
Charleston†				2.08	
Cloverdale†				6.10	
Davis*†‡	94	20	54.8	3.25	4.0
Dayton†	92	26	60.4		
Elkhorn†	90	32	60.3	5.24	T.

TABLE II.—*Meteorological record of voluntary and other cooperating observers*—Continued.

Stations.	Temperature. (Fahrenheit.) Maximum.	Minimum.	Mean.	Precipitation. Rain and melted snow.	Total depth of snow.
West Virginia—Cont'd.	°	°	°	*Ins.*	*Ins.*
Ella†	97	34	64.0	2.80	T.
Fairmont†	.....	.....	.....	1.58	
Glenville†	90	33	61.3	1.66	
Grafton†	91	29	61.0	1.65	T.
Green Sulphur	92	30	61.5	1.67	
Harpers Ferry†	.....	.....	.....	4.67	
Hewett†	96	34	63.8	.....	
Hinton *a*†	.....	.....	.....	4.05	
Hinton *b*†	94	36	63.1	.....	
Leachtown†	.....	.....	.....	1.17	
Madison†	89	31	60.3	3.94	
Marlinton†	96	.....	.....	2.40	
Martinsburg†	96	36	61.0	3.26	
Morgantown *a*†	.....	.....	.....	1.90	T.
Morgantown *b*†	.....	28	.....	1.39	.....
New Cumberland†	96	30	61.0	.....	
New Martinsville†	94	32	63.2	1.84	
Nuttallburg†	105	34	60.4	1.86	
Parkersburg	.....	.....	.....	.....	0.1
Pennsboro	100	27	63.8	.....	
Philippi†	.....	.....	.....	2.26	
Point Pleasant†	98	35	64.6	1.42	
Powellton†	91	31	59.9	3.41	T.
Rowlesburg†	.....	.....	.....	2.08	
Sandyville†	94	32	61.7	2.17	T.
Spencer†	97	30	58.1	1.80	
Tannery *[1]	93	31	62.8	.....	T.
Weston *a*†	.....	.....	.....	1.73	
Weston *b**[1]	91	34	62.5	1.73	T.
Wheeling *a*†	.....	.....	.....	1.18	T.
Wheeling *b*†	96	35	63.7	1.32	
Wiggins	93	40	66.4	.....	
Wisconsin.					
Amherst	94	25	57.7	2.26	T.
Antigo†	95	21	55.9	6.96	
Apollonia *†[1]	92	22	58.2	3.90	
Barron†	90	22	55.8	3.63	0.2
Bayfield	88	21	56.4	.....	
Beaver Dam	98	24	56.9	2.56	T.
Belleville	93	22	57.2	2.25	
Beloit	91	31	59.8	2.30	
Berlin	94	27	61.4	2.39	
Black River Falls†	99	18	57.7	4.87	
Butternut†	95	21	56.2	6.15	T.
Centralia	96	26	59.1	4.97	
Chilton	92	27	59.2	3.52	4.0
Chippewa Falls†	.....	.....	.....	4.01	
City Point	93	20	57.8	4.68	1.5
Crandon†	100	20	56.7	6.75	5.0
Delavan†	90	28	58.0	3.54	T.
Depere†	90	29	58.2	3.44	2.0
Eau Claire	94	25	59.4	1.17	
Florence†	96	17	51.9	6.25	0.3
Fond du Lac†	91	27	58.2	2.45	
Wisconsin—Cont'd.	°	°	°	*Ins.*	*Ins.*
Grantsburg†	93	23	58.2	4.61	
Green Bay	.....	.....	.....	.....	0.1
Hartford	.....	.....	.....	5.37	
Harvey†	90	29	58.0	6.06	T.
Hayward†	88	22	55.0	4.52	T.
Hillsboro	91	21	57.8	2.98	T.
Janesville†	91	28	59.1	4.25	
Kenosha *[10]	90	32	52.8	.....	
Koepenick *†[1]	90	28	56.2	4.58	6.0
Lancaster†	93	28	60.0	2.48	
Lincoln†‡	.....	.....	59.2	3.02	0.5
Madison†	88	33	59.2	2.16	0.1
Manitowoc†	83	29	51.0	4.42	
Meadow Valley†	94	27	58.4	3.78	1.0
Medford†	95	19	56.5	6.08	0.8
Milwaukee	.....	.....	.....	.....	T.
Neillsville†	94	22	56.6	4.60	T.
New Holstein†	90	26	58.7	2.99	2.0
Oconomowoc†	90	28	59.6	4.82	T.
Oconto	93	25	55.5	2.34	3.0
Osceola†	93	24	57.6	4.67	
Oshkosh†	92	27	62.8	3.55	1.0
Pepin	96	28	59.1	3.51	
Pine River†	95	24	58.4	2.47	T.
Portage†	.....	.....	.....	2.27	
Port Washington	92	29	53.6	2.50	T.
Prairie du Chien	97°	23	60.4°	3.12	
Racine *[10]	88	32	52.4	.....	
Royalton	96	27	58.3	3.96	2.0
Sharon†	92	28	59.4	3.86	
Shawano	94	23	56.4	2.23	0.4
Sheboygan *[10]	71	34	53.7	.....	
Spooner†	97	24	57.6	4.31	
Stevens Point†	95	24	58.8	4.65	1.0
Sturgeon Bay Canal *[10]	70	29	47.9	.....	
Two Rivers *[10]	70	34	50.6	.....	
Valley Junction†	95	24	58.4	3.87	T.
Viroqua	92	28	58.9	4.89	
Watertown†	88	28	59.2	5.11	
Waukesha†	89	29	58.6	5.01	T.
Waupaca†	.....	.....	.....	3.40	
Wausau†	93	26	57.4	6.25	2.0
West Bend	90	27	57.2	4.50	T.
Westfield†	93	25	59.1	1.83	2.4
Whitehall†	93	23	58.4	2.74	
Wyoming.					
Big Horn Ranch†	72	6	44.7	1.57	3.0
Cheyenne	.....	.....	.....	.....	0.2
Fort Laramie†	88	30	55.0	3.29	
Fort Washakie	75	25	50.2	0.55	
Fort Yellowstone†	.....	20	.....	1.68	0.2
Lander	78	26	50.0	2.32	
Lander (W B)	.....	.....	.....	.....	0.6
Laramie	75	25	45.4	2.09	.....
Wyoming—Cont'd.	°	°	°	*Ins.*	*Ins.*
Lusk	89	27	51.8	5.57	
Sheridan	80	28	51.2	1.88	
Sundance	82	27	48.6	3.47	5.0
Wheatland	90	25	54.6	4.30	
Mexico.					
Ciudad P. Diaz	94	60	74.8	3.79	
Leon de Aldamas	92	54	71.0	1.11	
Mexico	85	47	66.8	1.55	
Puebla	91	50	70.3	3.52	
Topolobampo *[1]	92	71	79.2	0.00	
New Brunswick.					
St. John	75	33	48.9	3.69	

EXPLANATION OF SIGNS.

* Extremes of temperature from observed readings of dry thermometer.

† Weather Bureau instruments.

‡ Record furnished by the Arrowhead Reservoir Company, in the San Bernardino Mountains, San Bernardino County, Cal., at elevations varying from 4,900 to 6,900 feet.

A numeral following the name of a station indicates the hours of observation from which the mean temperature was obtained, thus:

[1] Mean of 7 a. m. + 2 p. m. + 9 p. m. + 9 p. m. ÷ 4.
[2] Mean of 8 a. m. + 8 p. m. ÷ 2.
[3] Mean of 7 a. m. + 7 p. m. ÷ 2.
[4] Mean of 6 a. m. + 6 p. m. ÷ 2.
[5] Mean of 7 a. m. + 2 p. m. + 2.
[6] Mean of readings at various hours reduced to true daily mean by special tables.
[7] Mean from hourly readings of thermograph.
[8] Mean of 7 a. m. + 2 p. m. + 9 p. m. ÷ 3.
[9] Mean of sunrise and noon.
[10] Mean of sunrise, noon, sunset, and midnight.

The absence of a numeral indicates that the mean temperature has been obtained from daily readings of the maximum and minimum thermometers.

An italic letter following the name of a station, as "Livingston *a*," "Livingston *b*," indicates that two or more observers, as the case may be, are reporting from the same station. A small roman letter following the name of a station, or in figure columns, indicates the number of days missing from the record; for instance, "[a]" denotes 14 days missing.

No note is made of breaks in the continuity of temperature records when the same do not exceed two days. All known breaks, of whatever duration, in the precipitation record receive appropriate notice.

Correction: Page 85 in the March REVIEW, under "Local Storms," transfer Augusta, Ga., from 3d to the 30th.

TABLE III.—*Data from Canadian stations for the month of May*, 1895.

Stations.	Pressure. Mean not reduced.	Mean reduced.	Departure from normal.	Temperature. Mean.	Departure from normal.	Precipitation. Total.	Departure from normal.	Prevailing direction of wind.
	Inches.	*Inches.*	*Inches.*	°	°	*Inches*	*Inches.*	
St. Johns, N. F	29.88	30.03	+ .08	46.3	+ 1.9	2.97	.....	n.
Sydney, C. B. I	29.98	30.04	+ .07	49.4	+ 4.9	4.88	+ 0.55	sw.
Grindstone, G. of St. L.	29.92	29.95	.....	44.4	.....	1.84	.....	sw.
Anticosti, Gulf of St. L.	29.87	29.90	— .01	42.6	+ 1.9	2.90	.....	s.
Halifax, N. S	29.90	30.03	+ .06	51.0	+ 4.0	4.09	— 0.63	s.
Grand Manan, N. B	29.95	30.00	.....	49.2	.....	2.32	— 1.21	sw.
Yarmouth, N. S	29.96	30.04	+ .06	47.8	+ 0.8	5.28	+ 1.25	s.
St. Andrews, N. B	29.92	29.97	.....	49.6	.....	2.01	— 1.30	se.
Charlottetown, P. E. I.	29.95	29.99	.....	51.0	.....	3.36	+ 0.21	w.
Chatham, N. B	29.94	29.96	+ .01	52.4	+ 6.4	2.56	— 1.34	sw.
Father Point, Que	29.90	29.93	— .01	46.7	— 3.2	3.79	+ 1.36	w.
Quebec, Que	29.62	29.95	.00	53.6	+ 4.1	2.68	— 0.44	sw.
Montreal, Que	29.75	29.95	+ .02	57.4	+ 3.4	3.31	+ 0.23	sw.
Rockliffe, Ont	29.44	29.95	+ .01	53.8	+ 4.3	3.90	+ 1.30	nw.
Kingston, Ont	29.68	30.00	+ .04	52.7	— 0.3	1.48	— 1.27	sw.
Toronto, Ont	29.64	30.02	+ .04	54.7	+ 1.7	2.37	— 0.28	ne.
White River, Ont	28.64	29.98	.....	49.2	+ 5.6	1.73	+ 0.22	n.

TABLE III.—*Data from Canadian stations*—Continued.

Stations.	Pressure. Mean not reduced.	Mean reduced.	Departure from normal.	Temperature. Mean.	Departure from normal.	Precipitation. Total.	Departure from normal.	Prevailing direction of wind.
	Inches.	*Inches.*	*Inches.*	°	°	*Inches*	*Inches.*	
Port Stanley, Ont	29.40	30.04	+ .06	54.3	.....	1.93	— 0.91	e.
Saugeen, Ont	29.30	30.02	+ .06	54.6	+ 4.6	1.16	— 1.41	w.
Parry Sound, Ont	29.30	30.00	+ .04	54.5	+ 4.0	2.14	— 1.18	w.
Port Arthur, Ont	29.24	29.94	+ .02	47.8	+ 1.3	2.58	+ 0.40	ne.
Winnipeg, Man	29.07	29.89	— .04	53.3	+ 3.3	3.74	+ 0.92	ne.
Minnedosa, Man	28.96	29.85	— .04	50.8	+ 1.8	2.70	+ 1.06	nw.
Qu'Appelle, Assin	27.62	29.86	— .02	49.2	— 0.8	2.28	+ 0.76	nw.
Medicine Hat, Assin	27.57	29.84	— .02	54.0	— 1.5	0.55	— 0.61	w.
Swift Current, Assin	27.32	29.88	— .01	50.4	— 0.6	1.77	+ 0.28	w.
Calgary, Alberta	26.28	29.80	— .08	48.9	— 2.1	0.34	— 1.15	w.
Prince Albert, Sask	27.52	29.87	.....	48.7	.....	2.19	.....	e.
Edmonton, Alberta	27.52	29.84	— .08	50.0	+ 0.4	0.82	— 0.78	se.
Battleford, Sask	28.10	29.81	.....	51.4	.....	2.13	.....	nw.
Spences Bridge, B. C	29.06	29.87	.....	56.6	.....	1.71	.....	sw.
Hamilton, Bermuda	30.04	30.20	+ .14	71.2	.....	2.60	.....	s.
Esquimalt, B. C	29.95	29.98	.....	50.4	.....	1.60	.....	sw.

TABLE IV.—*Mean temperature for each hour of seventy-fifth meridian time, May, 1895.*

Stations.	1 a. m.	2 a. m.	3 a. m.	4 a. m.	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon.
Abilene, Tex	65.1	64.7	63.9	63.3	62.5	61.4	60.8	61.9	64.6	67.4	70.2	72.5
Albany, N. Y	56.1	54.8	54.2	53.4	52.7	53.4	55.1	57.6	60.0	62.5	64.5	66.1
Alpena, Mich	48.9	48.5	48.3	47.6	47.6	47.9	50.3	52.3	54.1	54.3	54.4	54.4
Amarillo, Tex	58.8	58.4	56.5	54.9	54.1	52.9	52.6	53.8	57.8	61.4	64.7	67.2
Atlanta, Ga	62.9	62.4	61.8	61.3	60.9	60.5	61.0	63.1	64.7	66.5	68.5	69.5
Augusta, Ga	63.7	62.8	61.7	61.2	60.6	60.7	62.3	64.8	67.2	69.9	71.9	73.5
Baker City, Oreg	47.9	46.2	45.0	44.0	43.3	42.2	41.1	41.1	43.5	47.6	50.8	53.3
Baltimore, Md	58.5	57.7	56.9	56.2	55.7	55.8	57.2	59.5	60.6	62.2	63.8	65.5
Bismarck, N. Dak	48.8	47.6	46.5	45.8	45.3	44.2	43.7	46.2	49.5	53.1	56.6	59.2
Boston, Mass	54.2	53.5	53.2	52.4	52.2	52.8	54.8	57.7	59.7	61.6	63.2	64.6
Buffalo, N. Y	53.7	53.2	53.1	52.5	51.9	52.3	53.7	55.1	56.4	57.4	58.8	59.9
Charleston, S. C	67.1	66.6	65.9	65.5	65.0	64.7	66.1	67.8	70.2	71.6	73.0	73.8
Charlotte, N. C	60.5	59.8	58.8	58.1	57.5	57.5	58.6	61.0	63.0	65.7	67.8	69.8
Cheyenne, Wyo	44.1	42.9	42.1	41.3	40.7	40.6	41.1	43.7	47.9	50.4	52.9	55.2
Chicago, Ill	57.2	56.7	56.2	55.6	55.2	54.8	54.9	56.6	57.6	59.1	60.3	61.6
Cincinnati, Ohio	60.4	59.6	58.7	57.9	57.3	56.9	56.5	58.8	60.5	62.9	64.8	66.2
Cleveland, Ohio	55.6	55.1	54.5	53.9	53.5	53.3	54.5	57.4	60.2	62.2	63.5	64.5
Columbus, Ohio	57.5	56.1	55.3	54.3	53.5	53.1	54.7	58.5	61.5	64.5	66.8	68.2
Denver, Colo	53.0	51.2	50.0	48.6	47.3	46.5	45.8	46.4	49.8	53.9	57.2	59.1
Des Moines, Iowa	58.0	57.0	56.4	56.0	55.1	54.7	54.8	56.8	59.6	62.0	64.2	65.8
Detroit, Mich	54.7	54.3	53.8	53.2	52.5	52.3	53.2	56.7	58.7	61.4	62.6	64.1
Dodge City, Kans	59.3	58.4	56.9	56.3	55.0	54.1	53.5	55.8	59.5	63.0	66.8	69.4
Duluth, Minn	47.7	47.6	47.4	47.5	46.8	46.2	46.5	47.9	48.6	49.6	50.6	51.8
Eastport, Me	44.0	43.5	43.1	42.9	43.3	44.3	45.9	47.7	49.5	50.6	51.7	51.6
El Paso, Tex	65.8	64.2	62.7	61.0	59.8	58.9	57.1	58.4	61.2	65.6	69.9	73.5
Fort Smith, Ark	63.1	62.2	61.8	61.2	60.7	60.0	60.5	63.5	65.7	68.6	71.1	72.9
Galveston, Tex	72.6	72.4	72.3	72.1	71.9	71.8	71.6	71.9	72.4	73.3	73.8	73.9
Grand Haven, Mich	52.2	50.8	49.5	49.4	49.6	49.2	50.6	53.7	55.6	58.1	59.7	60.2
Havre, Mont	47.9	46.3	44.2	43.3	42.3	41.1	40.1	42.6	46.4	49.9	53.8	56.8
Helena, Mont	49.3	48.5	46.8	46.2	45.2	44.2	43.1	43.7	46.1	48.3	50.4	52.8
Huron, S. Dak	51.2	50.1	49.1	48.3	47.3	46.4	46.6	50.5	54.3	57.8	61.2	63.0
Independence, Cal	63.7	62.5	61.2	59.4	58.8	56.5	54.9	55.3	53.8	57.2	60.7	65.7
Indianapolis, Ind	58.8	57.9	56.6	55.9	55.0	54.7	56.3	59.3	62.2	65.2	67.4	69.0
Jacksonville, Fla	69.8	69.3	68.7	68.3	67.9	67.5	69.0	71.4	73.7	76.0	77.2	78.4
Kansas City, Mo	60.9	59.9	59.0	58.2	57.2	56.6	56.6	58.3	60.9	63.9	66.7	68.9
Key West, Fla	77.8	77.5	77.4	77.3	77.3	77.2	78.6	80.1	80.7	81.4	82.1	82.4
Knoxville, Tenn	59.7	58.8	58.0	57.2	56.6	56.1	56.7	59.4	61.1	63.5	66.0	67.9
Lander, Wyo	48.0	46.0	44.0	43.1	42.4	41.4	40.1	41.8	45.7	50.2	53.1	55.4
Little Rock, Ark	64.1	63.2	62.6	61.7	61.1	60.5	60.9	62.9	65.3	67.7	69.8	71.8
Louisville, Ky	60.2	59.2	58.7	57.8	57.1	56.9	57.4	60.5	62.8	65.1	67.6	69.0
Lynchburg, Va	57.3	56.6	55.8	55.1	54.6	55.0	56.8	60.0	62.5	64.9	67.1	69.0
Marquette, Mich	49.7	49.7	49.4	49.1	49.0	49.2	50.0	52.2	54.5	55.5	57.2	58.9
Memphis, Tenn	64.4	63.8	63.2	62.6	61.7	61.1	61.5	63.9	66.1	68.5	70.7	72.6
Milwaukee, Wis	53.3	52.9	52.3	52.2	51.7	51.3	51.1	53.7	55.2	56.2	57.2	57.5
Mobile, Ala	69.1	68.7	68.3	67.8	67.0	66.8	67.4	69.2	71.2	73.3	74.9	75.5
Montgomery, Ala	65.9	65.3	64.7	64.1	63.6	63.2	63.8	66.5	68.8	71.0	73.6	75.2
Moorhead, Minn	51.9	50.8	49.9	48.8	48.1	47.3	47.3	49.6	52.8	56.3	59.2	60.9
Nantucket, Mass	50.5	50.4	50.5	50.5	51.0	51.9	52.8	53.9	55.0	55.9	56.6	57.5
Nashville, Tenn	61.2	60.4	59.3	58.6	57.5	57.2	57.9	60.4	62.9	65.5	68.2	69.6
New Haven, Conn	53.1	52.6	52.1	51.9	51.5	52.4	54.9	57.1	59.2	60.3	61.3	63.1
New Orleans, La	70.0	69.8	69.4	69.1	68.8	68.7	68.8	70.8	72.7	74.7	76.2	77.5
New York, N. Y	56.5	56.2	55.7	55.2	54.9	55.0	55.4	56.7	58.4	60.1	61.5	62.5
Norfolk, Va	58.4	58.1	58.1	58.0	57.7	57.7	59.4	61.2	62.9	64.7	66.2	67.4
North Platte, Nebr	54.7	53.4	51.9	50.1	49.0	47.4	46.8	49.5	52.9	56.3	59.4	62.4
Omaha, Nebr	61.5	60.4	59.1	58.0	56.8	56.2	55.5	56.6	57.8	60.7	63.4	66.0
Parkersburg, W. Va	56.7	55.2	54.2	53.1	52.2	52.3	55.4	59.7	63.6	66.6	68.8	70.6
Philadelphia, Pa	57.0	56.5	56.3	55.9	55.5	55.7	56.6	58.8	60.6	62.5	64.2	65.7
Pittsburg, Pa	58.7	57.9	56.9	56.2	55.5	55.0	56.1	58.7	62.4	65.0	66.5	68.3
Portland, Oreg	54.2	53.5	52.4	51.7	50.9	50.2	49.3	49.3	49.7	50.8	52.2	54.1
Rapid City, S. Dak	49.5	49.1	48.0	47.4	46.5	46.3	46.0	48.4	51.1	53.8	55.7	57.7
Red Bluff, Cal	64.1	62.6	61.0	59.3	57.8	57.0	56.0	55.2	55.8	58.8	61.5	64.3
Rochester, N. Y	53.8	53.0	52.5	52.0	51.5	51.9	54.3	58.6	61.5	64.5	66.1	66.9
Roseburg, Oreg	53.8	52.2	50.5	49.5	48.6	47.9	47.4	46.7	47.2	48.6	50.7	53.4
St. Louis, Mo	63.6	62.4	61.4	60.5	59.6	58.8	59.1	60.7	62.8	65.2	67.4	69.7
St. Paul, Minn	54.8	53.9	53.1	52.5	52.1	51.8	52.1	54.2	56.3	58.6	61.1	62.9
Salt Lake City, Utah	55.9	55.6	54.3	52.9	52.1	51.3	50.5	51.3	53.1	56.2	59.4	61.0
San Diego, Cal	59.9	59.5	59.3	59.1	58.8	58.5	58.2	58.1	58.5	59.6	61.0	62.2
San Francisco, Cal	54.2	54.0	53.6	53.4	53.0	52.9	52.6	52.4	53.2	54.2	56.2	57.8
Santa Fe, N. Mex	50.5	49.4	48.2	47.4	46.3	45.6	45.2	46.6	50.5	52.8	54.5	56.5
Sault Ste. Marie, Mich	47.0	46.4	45.5	44.9	44.7	44.7	46.5	48.5	51.5	53.8	56.4	58.3
Savannah, Ga	67.0	66.3	66.0	65.5	64.9	64.7	66.0	68.4	71.6	73.9	75.6	76.4
Seattle, Wash	52.6	51.9	51.2	50.5	49.8	49.3	49.0	48.5	48.9	50.0	51.5	52.9
Shreveport, La	66.6	65.7	65.3	64.5	63.8	63.1	63.4	65.3	67.7	70.2	72.6	74.6
Spokane, Wash	53.3	52.0	50.0	48.7	47.3	46.8	45.8	45.4	46.3	48.8	51.8	54.6
Titusville, Fla	71.6	71.3	70.9	70.6	70.3	70.1	71.9	75.2	76.6	78.1	79.3	80.0
Toledo, Ohio	56.7	55.9	55.4	54.9	54.5	54.0	54.5	57.4	58.8	61.2	63.1	64.7
Tucson, Ariz	72.5	70.3	67.7	65.1	63.2	61.2	60.4	59.6	62.8	69.0	75.7	80.5
Vicksburg, Miss	66.9	66.3	65.6	64.7	64.0	63.5	63.7	65.3	67.1	69.1	71.3	73.0
Washington, D. C	57.7	57.2	56.6	56.1	55.4	55.7	57.4	59.4	61.1	62.9	65.1	67.0
Williston, N. Dak	49.6	48.2	47.0	46.2	45.5	44.4	44.3	45.5	48.8	51.9	54.7	57.0
Wilmington, N. C	62.9	62.7	62.3	62.0	61.7	61.6	62.9	65.3	66.6	68.0	69.8	71.0
Winnemucca, Nev	54.1	52.1	50.4	49.4	48.4	47.4	45.6	44.1	45.8	49.3	53.1	56.5
Yuma, Ariz	73.3	72.0	70.9	69.3	67.9	66.2	65.5	65.6	68.4	73.3	78.1	83.0

Stations.	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	9 p. m.	10 p. m.	11 p. m.	Midnight.	Mean.
Abilene, Tex	74.6	76.4	78.0	79.0	79.4	78.7	77.5	75.2	71.9	69.5	67.8	66.6	69.7
Albany, N. Y	67.8	69.0	69.2	69.5	68.6	67.6	65.8	63.4	61.7	60.1	58.8	57.7	61.2
Alpena, Mich	55.7	55.9	57.4	57.0	56.1	55.8	54.9	53.1	51.5	50.6	49.9	49.7	52.3
Amarillo, Tex	69.6	71.8	73.2	74.5	74.7	74.5	73.4	71.1	67.6	65.0	62.8	61.1	63.9
Atlanta, Ga	70.9	72.3	72.9	73.7	73.3	72.7	71.2	68.6	67.3	66.2	64.7	63.9	66.7
Augusta, Ga	74.8	76.1	76.3	76.3	75.8	75.2	73.4	71.2	69.2	67.5	66.1	64.8	68.6
Baker City, Oreg	55.7	57.7	59.0	60.2	60.7	60.4	60.3	59.3	57.8	55.1	52.3	49.9	51.4
Baltimore, Md	66.5	68.0	68.1	68.1	67.8	67.2	66.1	64.1	63.0	61.8	60.8	59.9	62.1
Bismarck, N. Dak	60.9	62.2	63.5	63.9	63.7	63.6	61.8	60.6	56.7	53.9	51.8	50.3	54.1
Boston, Mass	65.6	66.2	65.9	65.5	65.5	65.1	62.6	60.2	58.4	57.5	56.6	55.9	59.4
Buffalo, N. Y	60.7	60.8	60.8	61.3	60.3	59.3	58.3	57.3	56.2	56.0	55.2	54.7	56.6
Charleston, S. C	74.3	74.1	74.2	74.2	73.3	72.3	71.2	69.3	69.1	68.7	68.5	67.9	69.8
Charlotte, N. C	71.0	72.3	73.0	72.9	72.3	71.5	69.7	67.2	65.9	64.3	63.1	62.2	65.1
Cheyenne, Wyo	56.7	58.2	59.2	59.4	58.9	58.7	58.2	57.0	53.9	50.5	47.6	45.6	50.3
Chicago, Ill	62.5	63.2	64.0	64.2	64.3	63.8	62.9	61.4	60.5	60.2	59.6	58.5	59.6
Cincinnati, Ohio	67.1	67.7	69.0	69.4	69.5	69.5	69.1	67.8	66.6	65.1	63.4	62.0	63.6
Cleveland, Ohio	64.0	63.7	63.2	63.8	64.2	64.6	64.1	62.9	62.0	60.7	59.1	57.7	59.9
Columbus, Ohio	69.0	69.2	70.7	71.1	71.1	70.7	69.2	66.6	64.4	62.5	60.7	59.3	62.9
Denver, Colo	60.7	62.6	64.1	64.7	65.2	65.0	64.4	63.2	61.4	59.0	56.8	54.8	56.3
Des Moines, Iowa	67.7	68.8	69.5	70.4	70.6	69.9	68.4	67.0	64.3	62.1	60.8	59.4	62.5
Detroit, Mich	64.4	65.4	66.1	66.3	66.0	65.5	64.1	61.7	60.0	58.4	57.4	56.4	59.5
Dodge City, Kans	71.7	74.1	76.0	77.2	77.0	76.6	74.8	72.6	68.1	65.6	63.0	61.2	65.2
Duluth, Minn	52.4	52.7	53.8	54.3	54.9	55.1	54.4	51.7	50.9	50.2	49.3	48.5	50.3
Eastport, Me	52.5	52.3	52.2	52.2	52.0	50.5	49.6	48.4	47.8	46.7	45.6	45.0	48.0
El Paso, Tex	76.3	78.7	80.3	81.1	81.5	81.8	81.3	78.9	76.3	72.3	69.9	67.8	70.2
Fort Smith, Ark	74.8	75.5	76.5	77.0	77.1	76.7	75.3	73.4	70.6	68.6	66.7	64.7	68.7
Galveston, Tex	74.6	74.7	74.8	75.1	74.8	74.5	74.1	73.6	73.2	73.0	73.1	72.6	73.3
Grand Haven, Mich	61.3	61.8	61.9	62.1	61.9	61.7	60.8	59.4	57.8	55.8	54.2	53.3	56.3
Havre, Mont	59.7	61.7	63.3	63.8	63.8	63.7	63.4	62.3	60.1	56.2	52.8	50.5	53.2
Helena, Mont	55.3	57.2	58.6	59.4	59.5	59.6	59.5	58.5	57.2	54.8	52.5	50.6	52.0
Huron, S. Dak	65.0	66.6	67.9	68.3	68.0	67.7	65.9	63.7	60.3	57.0	54.9	52.9	57.7
Independence, Cal	69.2	72.2	74.6	76.2	76.7	77.3	76.5	75.5	73.1	70.0	67.3	65.2	66.0
Indianapolis, Ind	70.7	71.6	72.9	73.0	72.8	72.2	70.6	68.1	65.5	63.5	62.1	60.6	64.3
Jacksonville, Fla	78.5	78.6	77.6	77.1	76.1	75.1	73.6	72.4	71.6	70.9	70.6	70.4	72.9
Kansas City, Mo	70.1	71.9	72.7	73.3	73.3	72.6	70.5	68.4	66.1	64.5	63.0	61.8	64.8
Key West, Fla	82.1	82.8	82.5	82.1	81.8	81.2	79.6	79.6	79.0	78.7	78.3	78.1	79.8
Knoxville, Tenn	69.6	70.6	71.2	70.3	70.0	69.2	68.1	66.1	64.8	63.4	62.0	60.8	63.6
Lander, Wyo	57.5	59.1	60.5	61.6	62.5	61.4	60.7	59.7	57.4	53.4	51.3	49.8	51.9
Little Rock, Ark	73.3	74.7	75.6	76.3	75.8	75.1	74.1	72.2	69.4	67.6	66.3	65.2	68.2
Louisville, Ky	70.7	71.8	72.8	73.1	73.3	72.4	71.2	68.7	67.0	65.2	63.2	61.5	65.1
Lynchburg, Va	69.9	70.7	71.1	70.8	70.3	69.2	67.2	64.6	62.9	61.3	59.9	58.6	63.0
Marquette, Mich	59.3	59.8	59.9	58.9	56.3	56.1	54.6	53.3	53.1	51.8	51.2	51.0	53.7
Memphis, Tenn	73.6	75.0	75.5	75.8	76.0	75.5	74.5	72.4	70.5	68.7	67.2	65.9	68.8
Milwaukee, Wis	57.9	58.0	58.0	59.2	59.5	59.3	58.4	56.1	55.8	55.3	55.1	54.5	55.5
Mobile, Ala	76.2	76.7	76.7	76.9	76.2	75.6	74.7	73.3	72.5	71.5	70.4	69.5	72.1
Montgomery, Ala	76.2	77.1	77.5	77.5	76.7	75.7	73.9	72.6	71.2	70.0	68.4	67.4	70.4
Moorhead, Minn	62.5	63.7	64.6	65.4	65.9	64.9	64.1	62.2	59.3	56.9	55.2	53.4	56.7
Nantucket, Mass	57.5	57.3	56.5	55.9	54.7	53.4	52.1	51.7	51.6	51.4	51.3	51.4	53.4
Nashville, Tenn	71.4	72.4	72.2	72.3	72.7	71.9	71.0	69.4	67.6	66.2	64.4	63.1	65.5
New Haven, Conn	64.5	65.2	65.2	64.9	64.3	62.5	60.0	58.2	57.0	56.1	55.1	54.2	56.2
New Orleans, La	77.7	78.5	77.8	78.4	78.1	77.4	76.2	74.5	73.1	72.2	71.2	70.7	73.4
New York, N. Y	63.2	63.7	63.3	63.2	62.8	61.9	61.1	60.3	59.3	58.8	58.3	57.7	59.2
Norfolk, Va	68.1	68.3	68.0	67.7	67.2	66.1	64.2	62.6	61.4	60.7	60.0	59.5	62.7
North Platte, Nebr	64.6	66.6	68.4	69.5	69.8	69.2	68.0	66.4	63.1	60.1	58.0	56.4	58.9
Omaha, Nebr	68.1	69.0	70.7	71.6	72.0	71.2	70.3	69.4	67.8	65.7	64.0	62.6	63.9
Parkersburg, W. Va	71.4	72.7	73.6	73.3	72.3	71.0	69.7	67.0	64.3	62.0	60.2	58.5	63.5
Philadelphia, Pa	66.9	68.1	68.5	68.8	68.4	67.3	65.2	63.3	61.5	60.2	59.2	58.4	61.7
Pittsburg, Pa	69.7	70.2	71.0	71.2	70.4	69.3	68.1	66.3	64.9	63.2	61.9	60.3	63.5
Portland, Oreg	55.9	57.1	58.9	59.9	61.0	61.9	61.7	61.4	60.2	58.9	56.9	55.5	55.3
Rapid City, S. Dak	59.2	60.6	61.7	61.9	62.0	62.0	60.5	59.1	56.4	54.1	51.9	50.1	54.1
Red Bluff, Cal	66.9	69.5	71.2	73.4	74.8	75.6	75.6	75.7	74.1	71.5	68.5	65.8	65.7
Rochester, N. Y	66.3	66.6	66.3	65.9	65.1	64.2	63.0	60.5	59.3	58.0	56.9	56.0	59.8
Roseburg, Oreg	56.1	58.1	60.0	62.1	63.1	64.0	63.9	63.0	62.3	60.6	58.1	55.5	55.1
St. Louis, Mo	71.2	72.7	73.8	74.2	74.1	72.8	72.0	70.4	68.7	67.4	66.2	64.8	66.6
St. Paul, Minn	64.4	65.1	65.5	65.4	65.1	64.6	63.7	61.8	60.3	58.5	57.3	56.0	58.8
Salt Lake City, Utah	62.4	63.6	64.4	64.7	65.3	65.7	65.1	65.0	64.1	60.9	58.6	57.6	58.8
San Diego, Cal	63.3	64.3	64.8	64.9	64.6	64.4	63.8	63.2	61.8	60.9	60.3	60.0	61.2
San Francisco, Cal	59.6	60.7	61.3	62.2	61.9	61.3	60.5	59.7	58.6	57.0	55.5	54.9	56.7
Santa Fe, N. Mex	58.2	59.8	61.4	62.5	63.2	63.3	62.4	61.1	58.5	55.4	53.5	53.4	54.4
Sault Ste. Marie, Mich	59.3	60.0	60.2	60.5	59.0	58.0	55.9	54.0	51.9	50.6	49.1	48.3	52.3
Savannah, Ga	77.6	78.1	77.3	75.8	74.4	73.1	71.6	70.1	69.4	68.7	68.3	67.7	70.8
Seattle, Wash	54.4	55.9	57.2	58.4	59.4	60.2	60.5	59.5	58.4	57.0	55.0	53.6	54.0
Shreveport, La	76.0	77.5	78.1	77.5	76.9	76.5	73.9	72.0	70.8	69.5	68.5	67.5	70.3
Spokane, Wash	57.7	59.3	60.4	61.3	61.8	62.1	62.5	62.4	61.7	60.3	57.7	55.3	54.7
Titusville, Fla	80.4	79.7	79.5	79.2	78.2	77.3	76.3	75.0	74.3	73.8	73.2	72.5	75.2
Toledo, Ohio	65.4	65.7	66.3	66.9	66.9	66.5	65.2	63.5	62.4	61.0	59.8	58.5	60.8
Tucson, Ariz	82.9	85.3	86.8	87.8	87.9	88.0	87.4	85.5	82.5	79.0	76.8	75.1	75.5
Vicksburg, Miss	74.7	76.1	77.4	77.8	78.8	77.4	76.0	73.4	71.7	70.5	69.2	68.0	70.4
Washington, D. C	68.3	69.0	69.5	69.3	68.5	67.6	65.8	63.8	62.3	61.4	60.4	59.3	62.4
Williston, N. Dak	58.6	59.8	61.2	61.9	62.5	62.2	60.9	59.9	57.8	54.4	51.8	50.8	53.5
Wilmington, N. C	71.8	72.3	71.8	71.8	71.2	70.3	68.3	66.3	65.4	64.6	64.1	63.7	66.6
Winnemucca, Nev	59.3	61.4	62.7	64.4	65.6	66.5	66.5	66.3	64.8	61.6	58.4	55.5	56.2
Yuma, Ariz	86.2	88.5	90.6	92.5	93.5	93.4	92.7	91.5	88.3	82.6	78.2	75.8	79.4

TABLE V.—*Mean pressure for each hour of seventy-fifth meridian time, May, 1895.*

Stations.	1 a. m.	2 a. m.	3 a. m.	4 a. m.	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon.	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	9 p. m.	10 p. m.	11 p. m.	Midnight.	Mean.
Abilene, Tex	28.165	.162	.157	.155	.159	.170	.188	.199	.208	.212	.207	.204	.187	.167	.150	.132	.115	.107	.105	.111	.126	.144	.159	.167	.161
Albany, N. Y	29.947	.948	.951	.955	.965	.977	.973	.988	.984	.978	.966	.951	.934	.921	.907	.898	.895	.895	.902	.913	.925	.930	.935	.936	.941
Alpena, Mich	29.346	.343	.341	.340	.344	.351	.356	.359	.361	.362	.344	.339	.328	.323	.319	.312	.310	.308	.311	.315	.327	.333	.335	.336	.335
Atlanta, Ga	28.888	.882	.881	.884	.891	.902	.919	.928	.936	.936	.933	.927	.911	.894	.878	.867	.861	.855	.860	.877	.886	.895	.896	.895	.895
Augusta, Ga	29.886	.882	.879	.884	.890	.903	.915	.927	.933	.930	.925	.914	.896	.884	.865	.855	.850	.847	.852	.861	.872	.886	.891	.893	.888
Baltimore, Md	29.874	.869	.872	.874	.884	.895	.901	.904	.909	.908	.902	.894	.881	.867	.855	.850	.846	.846	.853	.857	.872	.876	.875	.874	.877
Bismarck, N. Dak	28.156	.152	.151	.149	.147	.147	.159	.165	.169	.168	.164	.159	.151	.145	.137	.131	.122	.117	.117	.118	.127	.140	.146	.151	.145
Boston, Mass	29.903	.898	.899	.900	.911	.918	.923	.926	.924	.921	.911	.899	.888	.879	.867	.865	.861	.863	.871	.884	.894	.894	.897	.894	.895
Buffalo, N. Y	29.297	.293	.292	.294	.300	.309	.317	.320	.322	.322	.319	.308	.299	.291	.282	.274	.273	.268	.270	.279	.288	.292	.291	.291	.295
Charleston, S. C	30.050	.044	.038	.041	.047	.061	.071	.080	.087	.091	.091	.078	.069	.059	.048	.039	.036	.033	.038	.042	.050	.062	.061	.059	.056
Chicago, Ill	29.127	.121	.120	.122	.127	.141	.148	.153	.160	.160	.161	.156	.147	.137	.128	.114	.107	.103	.101	.105	.118	.123	.126	.127	.131
Cincinnati, Ohio	29.396	.393	.392	.393	.400	.413	.423	.429	.431	.428	.426	.419	.406	.392	.379	.370	.365	.361	.364	.371	.381	.392	.397	.401	.397
Cleveland, Ohio	29.246	.240	.241	.246	.254	.263	.275	.280	.280	.277	.271	.259	.251	.243	.237	.228	.228	.224	.227	.231	.239	.244	.245	.245	.249
Columbus, Ohio	29.186	.183	.181	.183	.189	.202	.212	.217	.216	.211	.205	.197	.186	.175	.161	.152	.147	.145	.151	.158	.170	.180	.184	.187	.182
Denver, Colo	24.722	.724	.720	.717	.718	.718	.723	.731	.740	.743	.744	.741	.735	.719	.706	.694	.680	.672	.671	.669	.675	.689	.704	.714	.711
Des Moines, Iowa	29.051	.053	.050	.051	.054	.056	.065	.075	.077	.080	.074	.068	.059	.047	.036	.023	.012	.011	.008	.015	.025	.041	.046	.050	.047
Detroit, Mich	29.251	.244	.241	.243	.248	.257	.267	.271	.273	.270	.268	.259	.250	.241	.232	.224	.223	.219	.222	.227	.236	.246	.246	.248	.246
Dodge City, Kans	27.330	.328	.326	.326	.332	.337	.345	.360	.374	.377	.374	.369	.357	.341	.323	.309	.297	.287	.282	.281	.293	.309	.323	.328	.330
Duluth, Minn	29.166	.164	.161	.165	.166	.172	.179	.181	.181	.174	.170	.164	.158	.150	.141	.132	.126	.123	.129	.133	.141	.151	.156	.159	.156
Eastport, Me	29.913	.911	.909	.911	.920	.927	.932	.934	.936	.934	.927	.917	.907	.899	.892	.888	.887	.889	.895	.899	.905	.906	.904	.904	.910
El Paso, Tex	26.138	.140	.140	.141	.143	.149	.157	.173	.185	.190	.188	.181	.167	.145	.126	.105	.087	.072	.066	.067	.078	.098	.119	.131	.133
Eureka, Cal	30.032	.028	.024	.019	.014	.007	.002	.000	.002	.008	.015	.022	.025	.029	.032	.035	.035	.036	.029	.028	.023	.022	.024	.032	.022
Fort Canby, Wash	29.823	.816	.815	.811	.807	.803	.800	.798	.805	.810	.815	.821	.828	.831	.836	.840	.841	.839	.838	.835	.832	.828	.830	.834	.822
Galveston, Tex	29.971	.962	.952	.951	.953	.958	.769	.979	.990	.996	.999	.999	.990	.980	.966	.948	.940	.936	.939	.945	.956	.968	.978	.980	.967
Grand Haven, Mich	29.308	.306	.306	.308	.314	.326	.336	.343	.345	.345	.344	.343	.335	.326	.317	.306	.299	.293	.288	.287	.290	.301	.305	.302	.316
Havre, Mont	27.289	.292	.295	.296	.297	.300	.304	.308	.311	.312	.309	.303	.294	.282	.271	.262	.255	.250	.248	.247	.259	.265	.279	.285	.284
Helena, Mont	25.798	.802	.803	.806	.809	.812	.816	.821	.824	.822	.818	.810	.801	.792	.782	.776	.768	.760	.757	.757	.762	.772	.780	.787	.794
Huron, S. Dak	28.516	.509	.506	.503	.507	.510	.522	.527	.528	.529	.528	.528	.520	.513	.504	.493	.485	.478	.471	.475	.483	.497	.509	.514	.507
Independence, Cal	25.947	.951	.954	.953	.952	.954	.956	.957	.967	.976	.985	.979	.971	.957	.940	.926	.910	.895	.890	.883	.883	.895	.914	.930	.938
Indianapolis, Ind	29.231	.228	.228	.231	.242	.253	.263	.273	.274	.275	.271	.263	.249	.238	.223	.211	.209	.205	.209	.217	.227	.234	.231	.232	.238
Jacksonville, Fla	30.015	.006	.003	.005	.013	.028	.040	.046	.051	.049	.044	.034	.020	.009	.994	.987	.988	.990	.002	.011	.022	.032	.034	.028	.019
Kansas City, Mo	28.976	.976	.977	.979	.981	.993	.002	.011	.015	.016	.014	.010	.996	.979	.969	.955	.939	.932	.934	.937	.947	.965	.976	.978	.977
Key West, Fla	30.030	.012	.005	.004	.007	.018	.031	.042	.048	.048	.044	.039	.030	.016	.995	.980	.973	.976	.992	.009	.020	.029	.032	.028	.017
Knoxville, Tenn	29.050	.049	.048	.053	.060	.071	.084	.093	.096	.098	.096	.084	.069	.054	.038	.025	.024	.024	.025	.033	.041	.053	.055	.056	.057
Little Rock, Ark	29.695	.692	.687	.687	.690	.697	.712	.725	.733	.740	.740	.737	.725	.712	.696	.679	.671	.663	.659	.664	.682	.698	.706	.703	.700
Louisville, Ky	29.494	.490	.488	.491	.498	.508	.522	.531	.534	.533	.529	.522	.509	.496	.480	.470	.465	.462	.465	.468	.480	.489	.496	.498	.497
Lynchburg, Va	29.351	.344	.344	.347	.356	.369	.377	.384	.384	.381	.371	.360	.345	.332	.319	.315	.313	.315	.328	.340	.349	.355	.355	.355	.350
Marquette, Mich	29.161	.156	.155	.155	.159	.161	.168	.176	.174	.171	.166	.160	.153	.145	.139	.136	.141	.141	.139	.140	.147	.151	.153	.156	.154
Memphis, Tenn	29.700	.694	.689	.687	.695	.706	.720	.732	.737	.741	.742	.739	.726	.715	.701	.688	.677	.670	.668	.674	.685	.697	.705	.706	.704
Milwaukee, Wis	29.276	.273	.274	.277	.283	.290	.303	.305	.309	.310	.308	.305	.300	.293	.283	.269	.260	.251	.249	.253	.263	.268	.268	.270	.281
Moorhead, Minn	28.894	.893	.890	.893	.890	.891	.897	.902	.902	.901	.895	.890	.882	.873	.867	.859	.853	.852	.852	.860	.868	.876	.879	.883	.881
Nantucket, Mass	30.051	.047	.046	.046	.051	.061	.068	.070	.069	.068	.065	.061	.052	.045	.038	.037	.035	.035	.035	.041	.048	.050	.049	.047	.051
Nashville, Tenn	29.486	.479	.474	.478	.480	.489	.503	.510	.515	.513	.511	.503	.487	.477	.466	.455	.451	.447	.450	.460	.473	.486	.491	.490	.482
New Haven, Conn	29.936	.934	.934	.934	.942	.952	.959	.963	.958	.955	.948	.938	.927	.916	.904	.896	.894	.900	.908	.917	.929	.930	.932	.931	.931
New Orleans, La	29.999	.991	.989	.989	.990	.999	.010	.018	.026	.027	.029	.025	.014	.001	.991	.978	.972	.968	.971	.978	.994	.004	.006	.006	.999
New York, N. Y	29.734	.730	.729	.728	.733	.742	.752	.756	.755	.753	.747	.740	.731	.721	.708	.704	.703	.704	.710	.717	.726	.730	.731	.731	.730
Norfolk, Va	30.018	.011	.008	.008	.012	.022	.031	.035	.037	.038	.037	.028	.019	.007	.000	.996	.995	.996	.001	.013	.024	.029	.027	.024	.017
Omaha, Nebr	28.772	.772	.770	.771	.776	.779	.790	.796	.800	.799	.794	.786	.780	.767	.756	.743	.732	.734	.729	.731	.740	.753	.767	.771	.767
Parkersburg, W. Va	29.400	.399	.399	.402	.410	.423	.434	.439	.433	.429	.423	.413	.400	.385	.367	.360	.359	.360	.364	.373	.386	.393	.398	.401	.398
Philadelphia, Pa	29.953	.948	.949	.948	.954	.964	.973	.980	.980	.978	.974	.962	.950	.940	.928	.922	.921	.921	.926	.934	.946	.952	.953	.951	.950
Pittsburg, Pa	29.178	.177	.175	.178	.184	.190	.200	.211	.211	.206	.195	.185	.169	.156	.143	.134	.128	.129	.136	.146	.155	.165	.171	.173	.171
Portland, Oreg	29.861	.860	.857	.854	.854	.851	.850	.853	.858	.865	.869	.867	.866	.864	.859	.853	.848	.841	.839	.838	.838	.843	.854	.864	.854
Rochester, N. Y	29.479	.476	.474	.475	.479	.485	.494	.497	.495	.495	.492	.485	.474	.467	.459	.455	.453	.452	.456	.461	.469	.473	.473	.471	.474
Roseburg, Oreg	29.451	.454	.454	.457	.457	.457	.457	.456	.458	.460	.462	.461	.459	.456	.446	.440	.435	.427	.425	.421	.422	.427	.437	.447	.447
St. Louis, Mo	29.429	.422	.418	.424	.428	.437	.448	.460	.466	.467	.467	.464	.458	.440	.427	.411	.403	.401	.396	.403	.411	.422	.427	.422	.432
St. Paul, Minn	29.088	.088	.084	.086	.089	.044	.050	.055	.056	.053	.045	.041	.032	.022	.013	.008	.997	.997	.992	.001	.011	.022	.031	.034	.028
Salt Lake City, Utah	25.579	.580	.583	.583	.584	.588	.593	.600	.607	.613	.614	.617	.611	.603	.591	.585	.571	.564	.557	.549	.547	.553	.565	.574	.584
San Diego, Cal	29.903	.899	.892	.884	.874	.869	.870	.873	.886	.894	.899	.902	.906	.904	.901	.897	.890	.882	.879	.877	.878	.885	.896	.902	.889
San Francisco, Cal	29.882	.879	.875	.869	.865	.861	.859	.860	.874	.883	.888	.893	.893	.892	.889	.884	.877	.867	.861	.856	.854	.856	.865	.877	.873
San L. Obispo, Cal	29.773	.773	.771	.767	.762	.760	.758	.758	.763	.768	.772	.773	.771	.770	.765	.762	.755	.752	.745	.741	.745	.748	.763	.770	.762
Santa Fe, N. Mex	23.267	.268	.265	.262	.261	.260	.263	.269	.276	.283	.285	.285	.282	.273	.258	.248	.238	.229	.223	.219	.228	.242	.256	.265	.259
S'lt Ste. Marie, Mich	29.287	.285	.278	.281	.285	.287	.293	.295	.293	.286	.278	.271	.264	.260	.254	.249	.251	.251	.255	.259	.269	.270	.270	.273	.273
Savannah, Ga	29.966	.961	.963	.966	.975	.989	.002	.015	.018	.018	.012	.003	.988	.975	.956	.946	.945	.944	.949	.956	.967	.975	.977	.978	.977
Seattle, Wash	29.873	.872	.873	.870	.866	.863	.862	.862	.865	.870	.874	.873	.871	.870	.867	.865	.862	.859	.855	.850	.849	.853	.865	.875	.865
Spokane, Wash	27.939	.941	.943	.949	.950	.952	.955	.961	.968	.974	.972	.970	.964	.955	.944	.938	.932	.928	.922	.919	.915	.922	.934	.938	.945
Tatoosh Isl'd, Wash	29.904	.900	.897	.894	.890	.887	.882	.882	.881	.886	.892	.895	.899	.904	.910	.915	.920	.921	.919	.919	.916	.912	.911	.914	.902
Toledo, Ohio	29.310	.305	.308	.312	.319	.328	.341	.346	.348	.344	.342	.333	.322	.312	.297	.288	.284	.278	.283	.287	.296	.303	.305	.309	.313
Vicksburg, Miss	29.749	.743	.739	.739	.741	.747	.762	.771	.779	.785	.787	.786	.777	.760	.747	.735	.722	.713	.711	.718	.728	.736	.747	.753	.749
Washington, D. C	29.967	.961	.959	.961	.968	.977	.984	.991	.995	.999	.994	.984	.975	.967	.953	.946	.943	.943	.948	.952	.963	.967	.967	.967	.968
Wilmington, N. C	29.988	.984	.984	.986	.993	.007	.018	.025	.029	.027	.019	.008	.997	.987	.976	.973	.971	.974	.983	.990	.998	.003	.004	.000	.997
Yuma, Ariz	29.664	.665	.662	.660	.661	.664	.672	.679	.701	.707	.710	.710	.703	.692	.671	.654	.630	.615	.604	.599	.601	.614	.635	.652	.659

TABLE VI.—*Average wind movement for each hour of seventy-fifth meridian time, May, 1895.*

Stations.	1 a. m.	2 a. m.	3 a. m.	4 a. m.	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon.	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	9 p. m.	10 p. m.	11 p. m.	Midnight.	Mean.
Abilene, Tex	10.5	11.2	11.1	10.3	9.9	9.0	8.8	9.3	10.3	11.7	12.4	12.0	12.0	11.5	11.6	11.2	10.9	11.8	12.1	12.6	10.5	9.5	10.3	10.1	10.9
Albany, N. Y	7.1	6.6	6.3	5.9	5.7	5.6	7.4	8.1	9.0	9.4	9.8	10.4	11.3	11.3	11.2	10.8	10.5	10.2	9.1	7.7	7.1	7.4	7.5	7.3	8.4
Alpena, Mich	6.4	6.5	6.4	6.2	6.1	5.8	6.0	7.6	8.9	9.6	10.3	12.1	12.8	13.6	13.6	13.2	12.8	11.6	10.6	8.5	6.8	6.2	6.2	5.9	8.9
Amarillo, Tex	19.2	18.5	18.4	17.7	17.2	16.3	16.7	18.5	21.7	23.3	23.3	22.8	21.8	22.2	22.5	23.1	22.7	22.6	23.9	24.5	21.4	20.5	18.7	19.5	20.7
Atlanta, Ga	7.5	7.5	7.2	7.3	7.7	8.3	8.3	8.3	9.1	9.2	9.4	9.4	9.0	9.3	9.2	9.2	9.2	8.8	8.4	7.2	7.3	8.2	8.9	8.1	8.4
Augusta, Ga	4.3	4.5	4.4	3.8	3.8	3.5	3.5	4.7	5.6	5.9	6.2	6.6	7.2	6.9	7.7	7.2	7.4	7.1	6.5	5.4	4.4	4.7	5.2	4.5	5.4
Baker City, Oreg	4.1	4.3	4.1	4.5	4.7	5.1	5.3	6.3	5.9	5.9	5.4	5.8	6.8	7.0	6.8	7.6	7.7	8.3	7.7	8.5	8.5	6.7	4.9	4.5	6.1
Baltimore, Md	5.7	5.3	5.3	5.0	5.2	5.1	6.0	6.8	7.7	7.9	8.7	9.6	9.7	9.7	10.2	10.1	10.1	8.9	7.7	7.0	5.8	5.8	6.3	5.7	7.3
Bismarck, N. Dak	7.5	7.3	6.9	7.0	7.0	7.5	6.9	7.3	7.8	9.7	11.5	12.8	13.6	13.8	14.2	14.6	14.0	12.6	12.5	12.1	10.0	9.0	8.7	8.5	10.1
Block Island, R. I	12.1	11.5	10.7	10.8	11.2	12.0	12.4	12.7	13.3	13.5	13.7	14.3	14.9	15.9	16.2	16.8	17.1	16.1	15.2	15.0	14.6	13.4	12.6	11.9	13.7
Boston, Mass	9.7	8.7	9.2	9.0	8.9	8.9	9.2	9.7	10.6	11.0	11.4	12.3	12.7	12.4	12.6	13.0	12.5	12.5	12.1	11.1	10.6	10.6	9.8	9.2	10.7
Buffalo, N. Y	8.1	7.3	7.7	7.6	8.0	8.3	9.0	8.9	9.6	10.4	10.5	10.2	11.1	11.6	10.7	9.9	9.8	11.1	9.6	8.9	8.7	8.6	7.8	7.5	9.2
Cairo, Ill	6.7	6.6	6.9	7.1	6.9	6.9	7.0	7.9	9.1	9.5	10.2	10.6	10.4	11.0	11.0	11.0	10.8	10.7	9.5	8.0	6.6	6.7	6.4	6.4	8.5
Cape Henry, Va	11.8	11.6	10.9	10.4	10.0	10.2	11.0	12.7	12.9	12.5	12.1	12.4	12.7	12.2	12.0	13.1	13.7	12.7	11.5	11.7	12.1	13.2	13.2	12.7	12.1
Charleston, S. C	5.6	6.0	5.9	6.0	6.1	6.3	6.9	8.0	7.9	8.5	8.6	9.8	11.3	11.6	11.0	11.5	10.7	10.3	9.2	7.9	7.0	6.6	6.4	5.7	8.1
Charlotte, N. C	5.3	5.4	5.2	5.2	4.5	4.4	4.6	5.5	5.9	6.3	6.7	6.9	6.9	7.3	7.4	7.5	7.3	6.7	5.7	5.0	5.5	6.1	5.8	5.4	5.9
Chattanooga, Tenn	4.1	4.4	3.9	3.9	3.9	4.0	3.8	4.2	5.2	5.7	6.5	7.3	7.3	7.8	7.9	8.7	8.5	8.3	6.7	5.6	5.1	4.3	4.1	4.3	5.6
Cheyenne, Wyo	8.8	8.6	8.9	9.3	8.6	8.5	8.8	9.2	10.5	12.3	13.0	13.1	12.9	13.1	12.9	13.6	14.1	13.7	13.8	13.6	11.7	9.2	10.1	9.8	11.2
Chicago, Ill	16.8	16.6	16.9	17.0	17.1	16.5	15.7	15.9	16.2	17.0	18.3	18.6	18.5	19.2	19.9	19.6	19.8	19.4	17.7	15.7	15.4	16.0	16.4	16.2	17.3
Cincinnati, Ohio	4.5	4.4	4.2	4.2	3.9	4.0	4.5	5.5	7.0	7.9	8.6	8.4	8.3	9.1	9.5	9.2	8.8	8.1	7.7	6.0	4.9	5.4	5.2	4.6	6.4
Cleveland, Ohio	11.4	11.8	11.3	11.3	11.2	10.8	11.0	11.4	11.9	12.7	12.1	12.1	13.5	14.5	14.1	13.0	13.2	11.7	10.2	8.8	9.2	10.5	11.3	11.3	11.7
Columbia, Mo	6.5	6.7	6.0	5.9	5.9	6.0	6.4	7.2	8.1	8.7	9.2	9.5	9.9	9.7	9.8	9.5	9.4	9.1	7.6	6.8	6.4	6.3	6.7	6.4	7.7
Columbus, Ohio	5.5	4.8	4.7	4.4	4.8	4.6	4.5	5.2	6.6	6.7	7.4	7.7	8.1	9.0	8.5	8.8	8.6	8.4	7.6	6.2	5.7	6.0	5.9	5.6	6.5
Concordia, Kans	9.9	9.3	8.4	8.9	9.5	8.6	7.9	9.0	10.3	11.1	11.4	11.0	10.9	11.6	11.8	11.9	11.8	12.2	12.0	11.7	9.7	9.5	9.8	9.8	10.3
Corpus Christi, Tex	13.4	12.6	11.8	11.7	11.5	11.7	11.9	12.5	12.9	12.3	13.0	14.1	14.3	14.7	15.0	15.8	16.5	17.1	16.8	17.3	16.6	16.0	15.7	14.9	14.2
Davenport, Iowa	8.5	8.1	7.5	7.2	7.8	7.7	8.0	8.8	9.3	10.6	11.1	11.9	12.5	13.5	13.6	14.0	14.5	13.5	12.9	11.8	10.0	8.7	8.2	8.5	10.3
Denver, Colo	7.9	8.2	7.2	7.2	7.1	7.1	6.8	7.0	6.6	6.6	6.7	7.5	7.7	8.1	9.6	10.1	10.1	10.3	10.6	10.2	8.8	8.0	7.9	7.9	8.1
Des Moines, Iowa	8.4	7.9	7.8	7.3	7.0	6.8	7.0	8.1	9.5	11.4	12.7	13.1	12.8	12.9	13.4	13.6	13.3	13.5	12.1	9.8	8.5	9.0	8.3	8.5	10.1
Detroit, Mich	7.7	7.9	7.4	7.4	8.2	8.1	8.1	9.2	10.6	10.5	11.3	12.5	13.4	13.9	14.0	14.2	13.3	12.6	10.7	9.0	8.4	8.3	8.4	8.4	10.1
Dodge City, Kans	12.6	12.3	11.7	12.3	12.9	11.8	11.5	13.0	15.3	17.4	17.2	16.5	16.5	16.5	16.5	16.7	17.2	17.0	16.9	16.0	14.1	13.7	13.2	12.6	14.6
Duluth, Minn	7.5	7.2	7.6	7.7	8.4	9.1	8.6	8.3	8.8	9.5	9.3	11.1	11.9	12.3	11.8	12.0	11.3	10.8	9.8	7.9	6.6	6.5	6.3	6.8	9.1
Eastport, Me	8.3	8.1	7.5	7.7	7.5	8.1	8.0	8.5	9.5	10.2	9.8	10.9	11.6	12.1	12.3	12.0	11.7	11.3	9.7	9.4	9.1	9.0	8.8	8.2	9.5
El Paso, Tex	11.8	11.0	10.5	10.5	10.9	11.7	10.8	12.4	11.7	11.3	12.1	12.6	13.0	13.4	14.1	15.5	16.7	17.4	17.0	17.8	15.7	12.8	11.9	11.9	13.1
Erie, Pa	11.1	10.7	10.8	10.7	10.3	10.5	10.1	10.1	10.5	10.3	10.3	10.4	10.1	9.5	10.6	9.9	9.5	8.3	7.4	7.2	7.5	8.7	9.9	10.5	9.8
Eureka, Cal	7.2	7.3	6.5	6.2	5.8	5.8	6.2	6.6	6.0	5.1	6.5	8.8	9.9	10.7	12.1	13.3	13.9	13.6	13.8	12.9	12.1	10.8	9.5	8.4	9.1
Fort Canby, Wash	14.5	14.0	14.5	14.5	13.4	11.5	11.8	11.5	11.9	12.1	12.5	13.5	14.1	14.3	15.4	15.7	15.6	14.6	14.3	14.4	14.4	14.3	13.9	14.7	13.8
Fort Smith, Ark	4.9	5.3	5.9	6.1	6.0	5.9	5.7	7.1	7.8	8.1	8.9	8.2	8.5	9.4	9.3	8.9	9.5	8.9	7.4	6.6	6.4	6.8	6.3	5.5	7.2
Fresno, Cal	9.8	10.1	9.6	8.7	8.4	7.5	7.1	6.6	5.9	6.1	7.3	7.1	6.7	6.1	6.5	6.6	7.3	7.7	8.8	9.4	10.2	10.0	9.9	10.5	8.1
Galveston, Tex	10.7	11.1	11.3	10.8	10.2	9.9	10.3	10.9	11.6	12.4	12.8	12.4	11.1	12.3	12.4	13.3	13.1	12.5	11.8	11.1	10.5	10.2	10.2	10.6	11.4
Grand Haven, Mich	9.3	9.4	9.4	8.9	8.4	9.3	9.8	10.4	11.1	11.2	12.0	12.2	13.1	13.2	12.9	12.3	10.8	10.2	9.3	8.1	8.1	8.6	8.5	8.1	10.2
Green Bay, Wis	8.0	7.8	7.8	7.9	8.0	7.7	7.8	8.5	9.8	10.2	10.5	11.4	11.8	11.4	11.2	12.2	11.9	11.0	11.2	9.3	7.9	8.4	7.5	7.9	9.5
Hannibal, Mo	9.5	9.2	8.5	8.6	8.6	8.4	8.7	9.2	10.2	10.6	11.9	12.7	13.2	13.5	13.4	13.5	14.0	12.5	11.7	9.5	8.4	7.9	8.8	9.5	10.5
Harrisburg, Pa	5.3	5.2	5.4	5.6	5.6	5.8	5.5	6.9	7.2	7.4	7.9	7.6	8.2	8.8	9.1	9.2	8.9	8.5	7.7	6.7	6.4	5.7	5.4	5.5	6.9
Hatteras, N. C	11.5	12.4	12.4	12.0	12.6	12.6	12.5	12.6	13.5	14.1	13.9	14.1	14.6	14.4	14.9	14.6	14.2	14.0	13.3	12.4	12.2	11.1	11.5	11.4	13.0
Havre, Mont	7.8	8.3	8.1	8.0	8.4	8.7	8.2	9.5	10.4	12.3	12.7	12.8	13.3	13.9	14.8	14.8	16.0	15.5	15.7	15.2	13.1	10.5	9.3	8.3	11.5
Helena, Mont	7.8	8.4	7.3	6.9	6.9	7.3	6.6	6.3	5.0	5.2	6.0	7.4	8.3	8.9	10.2	11.5	12.0	11.1	10.3	10.6	9.5	8.2	7.2	8.1	8.2
Huron, S. Dak	13.4	12.8	12.0	12.2	13.6	13.7	13.2	14.3	15.4	16.8	17.4	18.6	18.9	18.5	18.0	17.5	18.2	16.1	16.9	16.7	13.5	12.6	12.9	13.0	15.3
Idaho Falls, Idaho	8.5	7.8	7.8	7.7	6.5	6.7	7.3	7.2	6.6	7.7	9.0	8.3	8.2	8.7	9.0	9.2	9.1	10.0	9.3	10.8	10.8	9.5	9.3	8.5	8.5
Independence, Cal	9.8	9.4	8.8	9.1	9.0	8.6	8.6	8.0	7.7	7.9	8.9	9.4	9.0	8.4	9.0	10.9	13.2	14.2	14.7	14.0	13.3	12.0	10.5	9.7	10.2
Indianapolis, Ind	4.6	4.9	5.0	4.7	4.8	4.4	4.9	5.7	7.0	7.3	7.5	8.2	8.4	8.9	9.3	9.3	8.7	8.3	7.7	6.5	5.6	5.5	4.9	4.8	6.5
Jacksonville, Fla	5.3	4.9	4.4	4.9	5.1	4.6	4.7	5.1	6.1	6.2	7.0	8.1	8.6	9.1	9.9	10.0	9.8	9.3	8.0	7.0	6.3	5.7	5.3	5.7	6.7
Jupiter, Fla	6.8	6.7	6.2	6.2	6.3	6.2	5.7	6.5	8.2	8.3	9.1	10.1	11.4	11.5	10.7	11.6	11.1	10.2	9.5	8.1	8.0	8.1	8.1	7.7	8.4
Kansas City, Mo	8.5	8.6	8.7	8.5	8.4	8.0	8.3	8.6	10.3	11.5	12.5	12.6	12.4	12.6	12.7	13.1	13.0	13.2	12.4	10.9	9.4	9.4	9.2	9.0	10.5
Keokuk, Iowa	7.2	6.9	6.9	6.6	6.5	6.3	6.3	7.6	8.3	9.2	10.0	10.5	11.1	11.1	11.3	11.5	11.4	11.4	9.7	8.0	7.1	7.2	7.1	7.0	8.6
Key West, Fla	8.3	7.9	7.7	7.6	7.0	6.3	6.3	7.3	7.8	8.3	8.4	8.7	8.6	8.8	8.6	8.9	9.3	8.5	8.5	8.0	8.4	9.0	8.9	8.9	8.2
Kittyhawk, N. C	11.9	12.2	11.6	11.7	12.4	13.1	12.5	13.5	14.4	14.4	14.6	14.1	14.3	14.2	14.4	14.7	15.2	14.1	13.3	12.9	11.6	12.3	12.3	12.0	13.2
Knoxville, Tenn	3.1	2.0	2.1	2.1	1.8	2.5	2.6	3.5	4.0	5.0	5.2	5.5	6.0	5.8	6.2	6.3	6.2	6.0	4.7	3.8	3.4	2.8	2.5	2.7	4.0
La Crosse, Wis	7.1	6.3	6.4	6.5	6.5	6.6	6.6	7.1	8.5	9.2	9.5	10.1	11.0	11.1	11.2	11.0	10.1	10.2	9.1	7.1	6.9	7.2	7.0	7.1	8.3
Lander, Wyo	4.5	3.9	2.9	2.7	3.0	3.0	3.0	2.3	2.5	2.8	3.7	4.2	4.7	5.5	6.5	7.2	7.9	8.2	7.9	7.9	7.1	5.8	5.7	5.1	4.9
Lexington, Ky	9.3	9.6	8.9	9.3	9.2	9.5	9.6	9.3	9.9	10.4	10.2	10.1	10.2	10.4	11.9	10.2	10.1	8.8	9.2	8.7	8.5	8.3	8.5	9.3	9.6
Little Rock, Ark	5.4	5.3	5.3	5.3	5.6	5.7	5.1	6.2	7.6	8.7	9.5	9.5	9.8	9.5	10.1	10.1	10.3	9.0	8.5	7.3	6.7	5.9	5.6	5.8	7.4
Los Angeles, Cal	2.3	2.0	2.1	2.4	2.0	2.4	2.3	2.2	2.4	2.3	2.8	2.7	3.5	4.1	5.8	7.1	7.4	8.1	7.8	6.6	5.9	5.2	3.4	2.6	4.0
Louisville, Ky	4.8	4.7	5.0	4.6	5.2	4.9	4.2	5.0	6.4	7.2	8.3	8.6	9.2	9.1	9.5	9.4	9.6	9.8	8.4	7.1	6.2	6.1	5.5	5.2	6.8
Lynchburg, Va	2.1	2.0	1.9	1.9	1.6	1.6	2.6	3.4	4.6	5.0	5.0	5.2	5.6	6.0	5.7	6.2	5.9	6.0	5.2	3.5	2.6	2.4	2.0	1.6	3.7
Marquette, Mich	11.0	11.4	10.9	10.6	10.5	10.9	11.3	11.3	11.2	12.1	12.3	12.7	12.9	13.8	14.0	13.8	12.6	11.4	10.1	8.9	8.5	9.2	9.7	11.1	11.3
Memphis, Tenn	7.1	6.5	5.8	5.9	5.7	6.2	6.9	7.5	8.3	8.8	9.2	9.1	10.0	9.7	10.1	9.9	9.9	9.6	8.6	7.0	5.9	6.2	6.2	6.9	7.8
Meridian, Miss	3.9	3.8	3.5	3.0	3.0	3.1	3.1	3.6	5.4	6.4	7.0	6.8	8.1	7.8	7.7	8.2	8.4	7.4	6.3	5.0	4.6	4.7	4.9	4.4	5.4
Miles City, Mont	6.2	6.3	6.2	6.4	6.3	5.9	5.8	6.2	6.9	8.1	8.6	9.5	9.8	10.0	9.8	9.8	9.8	9.7	10.5	9.1	7.3	6.8	6.6	6.0	7.8
Milwaukee, Wis	7.1	7.4	7.4	8.1	7.9	8.1	8.1	8.9	9.6	10.6	11.1	12.3	13.0	12.8	13.2	13.4	11.7	10.4	9.5	8.6	7.7	8.4	7.5	6.8	9.6
Mobile, Ala	6.3	6.4	5.5	5.3	5.7	6.0	5.3	5.8	6.5	6.8	7.7	8.4	9.5	10.8	11.5	11.3	11.8	10.9	9.6	8.2	7.6	7.2	7.4	6.7	7.8
Montgomery, Ala	4.6	4.6	4.3	4.0	4.1	3.8	4.0	4.9	5.9	6.2	6.1	6.5	6.9	7.8	7.8	7.9	7.6	8.2	6.6	5.2	4.8	5.0	5.5	4.8	5.7
Moorhead, Minn	8.2	8.3	8.4	8.7	8.5	9.1	8.8	9.4	10.3	12.3	12.7	13.2	13.9	14.6	14.5	13.9	13.4	12.4	11.2	10.7	8.8	8.1	9.1	9.4	10.8
Nantucket, Mass	7.9	8.6	8.3	8.5	8.8	9.3	9.7	10.1	10.7	10.7	11.9	10.8	11.5	11.8	12.2	11.9	10.9	10.2	9.1	8.8	8.7	8.0	8.1	8.1	9.8
Nashville, Tenn	3.8	3.5	3.3	3.1	3.6	3.7	3.5	5.0	6.1	7.0	8.7	9.2	9.3	9.2	10.3	9.6	9.6	9.3	8.2	7.1	5.9	5.6	4.6	3.8	6.4
New Haven, Conn	5.0	5.3	5.5	5.5	5.7	6.1	6.1	7.1	8.8	9.6	10.4	11.3	12.4	13.2	13.3	13.0	11.6	10.5	8.9	8.0	7.1	6.4	5.8	5.4	8.4
New London, Conn	4.5	4.6	4.2	4.2	4.5	4.8	5.0	6.4	6.5	8.5	9.7	9.5	10.3	10.6	10.7	11.1	10.4	8.5	7.1	5.5	5.1	4.9	5.0	4.3	6.9
New Orleans, La	6.5	6.3	6.4	6.5	6.6	6.1	6.2	6.9	8.3	9.1	9.7	9.5	9.9	10.3	10.8	10.5	10.7	9.8	9.0	9.0	8.4	7.9	7.5	7.2	8.3
New York, N. Y	10.6	10.3	10.0	10.1	10.2	10.0	10.3	10.4	11.0	10.7	11.6	12.8	14.0	13.9	14.5	14.5	14.6	15.0	14.3	13.7	13.2	13.0	11.6	10.5	12.1
Norfolk, Va	7.0	6.4	6.5	5.8	5.7	5.6	6.1	7.4	7.9	8.6	8.9	8.5	9.4	8.9	9.2	9.6	9.2	8.7	8.4	7.7	7.4	7.4	7.9	7.1	7.7
Northfield, Vt	7.1	6.6	7.0	6.7	5.7	5.3	5.2	6.4	9.1	10.0	11.2	12.3	12.6	13.1	12.8	12.6	10.8	10.9	9.0	8.5	8.9	8.5	8.4	7.4	9.0
North Platte, Nebr	11.1	11.2	10.8	10.5	9.9	10.0	9.4	9.5	11.2	13.5	14.4	14.1	14.3	15.0	15.2	14.9	14.9	15.8	14.8	14.1	11.9	10.9	11.1	10.9	12.5
Oklahoma, Okla	10.5	10.4	9.9	9.6	9.3	9.3	9.1	9.8	11.2	12.5	13.2	13.1	13.1	12.9	12.9	13.9	14.3	15.0	15.2	14.4	12.6	11.4	11.2	11.3	11.9
Omaha, Nebr	8.2	8.3	8.5	8.2	8.0	8.5	8.0	9.2	10.0	10.7	11.8	11.8	12.2	12.4	12.4	12.2	11.8	12.0	12.0	9.6	8.8	8.3	8.6	8.7	10.0
Oswego, N. Y	9.1	9.7	9.8	9.9	9.8	9.8	9.1	10.0	11.2	10.9	10.8	9.3	9.5	9.3	9.2	9.1	8.5	7.7	6.8	7.2	7.8	8.8	9.8	9.2	9.3
Palestine, Tex	6.5	6.6	6.3	5.8	5.5	5.5	5.7	6.1	6.9	8.0	8.0	8.1	8.3	7.9	7.9	8.2	7.2	7.4	7.7	6.0	5.4	5.1	5.9	6.1	6.8

TABLE VI.—*Average wind movement, etc.*—Continued.

Stations.	1 a. m.	2 a. m.	3 a. m.	4 a. m.	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon.	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	9 p. m.	10 p. m.	11 p. m.	Midnight.	Mean.
Parkersburg, W. Va	4.1	3.7	3.9	3.7	3.5	3.4	3.4	4.6	5.4	5.8	6.1	6.1	6.1	6.5	6.5	7.1	7.5	6.7	5.9	5.5	4.6	4.5	4.0	4.3	5.1
Pensacola, Fla	7.7	7.6	7.9	7.4	7.6	7.4	7.1	8.6	9.3	9.3	9.5	10.0	10.6	11.4	11.5	11.2	11.2	10.5	10.7	9.5	8.3	7.8	6.9	7.3	9.0
Philadelphia, Pa	8.1	7.5	7.8	7.5	7.7	7.9	8.0	9.3	9.9	10.2	10.6	10.8	11.6	11.9	11.7	12.0	12.0	11.7	10.5	10.0	9.2	8.9	8.5	8.1	9.6
Pierre, S. Dak	12.4	13.3	11.2	9.5	8.8	7.8	7.8	7.6	8.5	11.6	12.7	13.7	14.7	14.4	13.9	13.6	15.3	15.4	16.3	16.2	15.0	12.7	12.[illegible]	[illegible]	12.4
Pittsburg, Pa	4.6	4.4	4.6	4.2	4.1	3.9	4.1	5.2	6.2	6.5	7.5	7.3	7.4	7.9	7.9	8.0	7.7	8.4	7.2	7.4	6.3	5.8	5.4	5.0	6.1
Port Angeles, Wash	5.6	5.6	5.4	5.4	5.4	5.3	5.0	5.4	4.7	3.6	4.9	5.7	7.5	7.5	6.9	7.2	7.4	8.0	8.7	9.9	9.7	8.9	7.0	5.7	6.5
Port Huron, Mich	9.5	9.3	8.6	8.4	9.2	9.2	8.8	9.5	10.0	11.2	11.8	12.6	13.9	14.4	14.5	13.7	13.9	12.9	11.4	10.4	10.3	10.2	9.9	9.5	11.0
Portland, Me	5.8	6.0	5.8	5.4	4.9	4.7	4.8	5.8	6.9	7.2	8.8	9.3	10.2	10.7	11.5	11.8	11.1	9.8	8.3	7.4	7.0	6.7	6.2	6.0	7.6
Portland, Oreg	8.2	8.6	9.1	9.1	9.6	9.5	10.0	10.5	9.7	9.5	9.6	10.0	11.3	11.8	11.7	11.9	13.2	12.2	11.8	11.3	10.5	10.8	9.7	8.9	10.3
Pueblo, Colo	9.8	9.3	10.2	9.0	7.8	7.4	6.9	6.5	6.9	8.2	8.9	8.3	8.5	9.2	11.1	11.2	11.2	11.6	11.5	11.9	10.1	8.6	9.5	9.1	9.3
Raleigh, N. C	4.2	4.3	4.1	4.6	4.6	4.6	4.7	5.6	5.9	6.1	6.5	6.3	6.3	6.6	6.6	7.0	6.3	5.8	4.8	4.3	4.2	3.9	4.3	4.0	5.2
Rapid City, S. Dak	9.0	8.4	8.2	8.3	8.5	9.1	9.4	9.5	10.2	11.7	12.5	13.5	13.1	13.8	14.6	14.4	14.2	13.6	13.6	12.1	10.4	8.2	7.9	8.9	11.0
Red Bluff, Cal	7.7	7.5	6.7	6.8	6.5	6.1	6.3	6.2	5.9	6.9	8.3	8.6	8.6	8.0	8.4	8.5	8.4	7.9	7.9	8.4	8.3	8.5	8.1	7.9	7.6
Rochester, N. Y	6.2	6.7	6.7	6.7	6.6	6.7	7.2	7.8	8.7	8.3	8.7	8.6	9.5	8.9	9.1	9.3	9.1	8.5	7.6	6.8	6.3	6.4	6.8	6.3	7.7
Roseburg, Oreg	3.0	2.2	2.2	1.8	2.1	1.9	1.4	1.7	1.5	1.8	2.7	3.8	4.5	5.2	5.8	6.3	6.6	8.1	8.3	8.4	8.5	7.2	5.7	3.6	4.4
Sacramento, Cal	10.2	9.7	9.6	9.8	10.0	10.0	10.3	9.9	9.3	9.1	9.7	9.8	10.5	10.8	11.2	11.0	11.5	11.5	12.2	13.0	12.0	11.7	11.0	10.3	10.6
St. Louis, Mo	10.2	10.3	10.2	9.5	9.5	10.0	9.7	11.0	12.0	12.1	13.4	13.5	13.6	13.9	14.8	15.1	15.0	14.6	13.0	10.9	9.9	9.7	10.5	10.6	11.8
St. Paul, Minn	6.5	6.4	6.1	5.9	6.2	6.5	6.3	6.6	8.2	9.3	10.2	10.9	11.5	11.7	11.8	11.2	10.9	10.3	9.7	9.1	7.6	7.5	7.0	6.3	8.5
St. Vincent, Minn	7.4	7.5	7.4	6.8	6.8	7.1	7.3	8.2	9.8	10.3	11.5	11.6	11.0	11.9	12.7	12.4	11.6	12.6	11.5	10.3	7.8	7.5	7.8	8.0	9.5
Salt Lake City, Utah	5.2	5.4	5.3	5.7	5.1	4.5	4.9	5.3	5.2	5.4	6.4	8.1	9.7	11.2	11.3	10.9	11.5	10.9	11.1	9.5	7.5	6.5	6.3	5.3	7.4
San Antonio, Tex	6.4	5.9	5.5	4.6	5.1	4.8	5.1	4.5	5.5	6.8	8.2	8.2	7.9	8.2	8.4	8.1	7.5	7.5	7.7	7.4	7.3	6.9	6.8	6.4	6.7
San Diego, Cal	3.8	3.5	3.6	3.6	3.5	3.4	3.3	3.5	3.7	3.3	4.0	5.0	7.0	8.3	9.2	10.1	10.2	10.2	9.5	8.5	7.4	5.9	4.6	4.1	5.8
Sandusky, Ohio	7.9	7.8	8.0	8.1	8.1	7.4	7.8	7.8	8.3	8.8	9.2	8.5	9.4	9.8	10.0	9 9	9.6	9.1	8.9	7.5	6.9	6.5	6.6	6.6	8.3
San Francisco, Cal	12.4	11.7	10.9	10.5	9.3	8.8	8.8	8.8	8.3	8.1	8.2	9.5	10.0	12.5	15.5	17.5	18.2	19.6	19.3	19.4	18.8	17.5	15.2	13.5	13.0
San Luis Obispo, Cal	4.8	4.5	4.7	4.3	4.6	4.9	4.6	4.6	5.1	5.4	5.8	6.8	7.6	9.2	12.4	13.1	13.9	13.7	13.3	13.2	11.8	9.9	7.4	6.3	8.0
Santa Fe, N. Mex	6.1	6.3	5.7	5.6	5.5	5.6	4.9	4.5	4.9	6.4	8.0	9.2	9.5	9.8	10.8	11.9	11.7	11.6	12.7	12.9	11.6	8.6	7.9	7.8	8.3
Sault Ste Marie, Mich	5.2	5.3	5.5	4.9	5.1	5.5	5.7	5.6	7.1	7.7	8.6	9.8	11.5	12.3	13.4	12.7	12 7	11.4	10.0	7.7	7.0	5.9	5.7	6.0	8.0
Savannah, Ga	5.2	5.0	4.7	4.6	4.5	4.6	5.5	6.2	7.2	7.3	7.8	8.3	8.5	9.0	10.1	10.6	10.6	9.6	8.5	7.3	6.0	6.0	5.7	5.8	7.0
Seattle, Wash	5 6	5.4	5.5	6.1	5.9	5.7	5.5	5.7	5.8	6.0	6.2	6.7	7.3	7.3	7.8	7.8	8.5	9.0	8.5	8.8	8.8	7.5	6.7	6.3	6.9
Shreveport, La	6.8	6.3	6.5	6.3	5.9	5.6	5.8	6.4	7.1	7.3	8.1	8.8	9.1	8.4	8.8	9.4	9.0	8.8	9.4	7.7	7.1	7.5	7.3	6.5	7.5
Sioux City, Iowa	10.8	11.3	11.2	10.8	11.0	10.9	10.4	11.2	11.9	13.5	14.4	14.5	14.6	14.9	14.2	14.2	14.3	13.9	12.8	12.8	11.3	10.2	11.8	11.3	12.4
Spokane, Wash	5.1	5.6	6.2	5.8	5.8	6.0	6.5	7.3	6.7	7.0	8.0	8.5	9.2	9.5	10.2	10.1	10.1	9.7	9.1	8.5	8.3	7.0	5.9	5.2	7.5
Springfield, Ill	9.2	9.0	8.8	8.5	8.4	8.5	9.3	9.8	10.9	11.7	12.4	12.8	12 5	13.0	13.4	13.5	13.4	12.8	12.0	9 6	8.1	8.5	8.9	9.2	10.6
Springfield, Mo	10.4	10.8	10.5	10.5	10.7	10.6	10.1	10.6	11.4	12.0	12.3	12.1	12.3	13 1	13 0	12.9	13.3	13.3	11.7	10.8	9.8	10.3	10.6	10.3	11.4
Tampa, Fla	4.5	4.4	4.1	3.6	3.9	4.1	4.3	5.1	6.0	6.6	6.9	7.4	8.0	8.3	8.7	8.9	8.8	8.4	7.8	5.6	4.7	5.1	4.9	4.4	6.0
Tatoosh Island, Wash	10.5	11.3	11.8	12.7	13.0	12.6	12.4	12.3	12.6	13.4	14.4	14.1	13.7	14.7	15.3	15.4	15.4	14.6	12.7	13.2	11.9	11.4	11.4	10.9	13.0
Titusville, Fla	9.6	8.5	8.1	7.7	7.2	6.5	7.4	8.2	9.5	10.7	12.2	12.8	13.3	14.4	14.6	15.3	15.6	15.6	15.4	13.7	11.9	11.1	10.5	9.0	11.2
Toledo, Ohio	7.7	8.0	8.0	7.8	8 0	8.2	8.6	9.7	10.2	10.3	10.9	11.8	12.2	12.2	12.8	12 6	12.3	11.1	9.8	7.0	6.4	6.7	6.9	7.3	9.4
Tucson, Ariz	5.5	4.3	3.6	3.2	3.3	3.4	3.3	3.7	3.8	3.4	3.8	4.5	6.1	6.8	8.2	9.1	9.8	9.6	9.1	8.8	7.7	5.9	6.4	7.0	5.8
Vicksburg, Miss	6.6	6.6	6.5	6.1	5.4	5.6	5.2	5.8	6.8	7.1	7.5	7.5	7.9	8.6	8.1	8.7	8.0	7.3	6.8	6.1	5.5	6.1	6.7	7.2	6.8
Vineyard Haven, Mass	7.0	7.0	7.1	6.5	6.4	7.2	7.3	8.2	8.9	9.3	9.8	10.5	10.7	11.0	11.6	11.6	10.9	9.5	8.5	7.5	7.4	7.0	7.3	7.0	8.5
Walla Walla, Wash	6.5	6.7	6.7	6.7	6.1	5.9	5.9	5.5	5.6	6.3	7.0	7.1	7.3	7.3	7.0	7.0	7.4	8.5	8.2	7.9	7.7	6.6	6.8	6.7	6.8
Washington, D. C	4.3	4.6	4.5	4.6	4.9	4.7	5.7	7.0	7.6	8.5	8.5	8.9	9.5	9.4	9.8	9 5	9.5	8.5	7.0	5.4	4.7	4.3	4.2	4 5	6.7
Wichita, Kans	9.0	8.7	9.2	9.2	8.7	8.2	7.9	8.3	10.1	11.5	12.2	12.7	12.6	13.0	13.3	13.3	13.1	12.3	11.5	10.6	9.2	9.1	9.0	9 4	10.5
Williston, N. Dak	8.0	7.7	6.4	6.1	6.3	5.3	6.1	6.4	7.9	10.8	12.0	13.0	13.9	14.2	14.3	15.0	15.1	14.9	15.3	14.3	11.1	9.5	9.5	8.4	10.5
Wilmington, N. C	5.8	5.9	5.9	6.4	6.4	5.7	6.5	8.0	8.5	8.7	8.7	9.1	10.2	10.8	11.4	11.6	10.7	10.1	8.8	6.8	6.5	6.6	5.8	5.7	7.9
Winnemucca, Nev	10.2	10.8	10.5	11.8	11.0	10.3	9.9	10.2	9.5	10.4	11.2	11.7	12.6	13.2	12.9	13.3	14.1	14.3	14.2	14.4	13.7	11.4	10.8	10.9	11.8
Woods Holl, Mass	11.2	11.3	11.2	10.3	10 1	10.5	10.0	11.0	12.2	11.6	12.8	14.2	14.6	16.2	17.6	17.7	16.3	14.5	11.9	12.4	11.7	11.9	11.6	11.8	12.7
Yuma, Ariz	7.1	6.1	6.4	6.3	5.6	4.3	4.6	5.2	4.4	5.2	7.4	8.2	9.2	9.0	8.9	9.9	10.1	11.1	11.3	11.9	12.1	9.7	9.1	8.2	8.0

TABLE VII.—*Heights of rivers above low-water mark, May, 1895.*

Stations.	Distance to mouth of river.	Danger-point on gauge.	Highest water.		Lowest water.		Me'nstage.	Monthly range.
			Height.	Date.	Height.	Date.		
Mississippi River.	Miles.	Feet.	Feet.		Feet.		Feet.	Feet
St. Paul, Minn	2,057	14.0	2.5	11	0.7	1	1.7	1.8
La Crosse, Wis	1,867	10.0	5.3	18,19	2.0	1	4.1	3.3
Dubuque, Iowa	1,759	15.0	5.9	21,22	2.1	3	4.3	3.8
Davenport, Iowa	1,653	15.0	4.2	23,24	1.4	3,4	3.0	2.8
Keokuk, Iowa	1,523	14.0	4.2	26,27	1.5	6	2.9	2.7
Hannibal, Mo	1,462	17.0	4.4	27	2.3	1	3.4	2.1
St. Louis, Mo	1,321	30.0	9.9	22	5.6	3	7.4	4.3
Memphis, Tenn	910	33.0	13.4	1	7.0	11,14,15	8.7	6.4
Helena, Ark	834	37.0	21.4	1	11.0	16	13.9	10.4
Arkansas City, Ark	702	42.0	24.7	1	12.4	17,18	15.2	12.3
Greenville, Miss	662	40.0	20.8	1	9.8	17,18	12.3	11.0
Vicksburg, Miss	541	41.0	24.1	1	10.2	25-27	14.1	13.9
New Orleans, La	108	13.0	8.2	2	3.7	30	5.5	4.5
Illinois River.								
Beardstown, Ill	76	12.0	7.0	1,2	6.3	25-31	6.6	0.7
Missouri River.								
Pierre, S. Dak	1,132	13.0	5.3	10	3.1	1	4.3	2.2
Sioux City, Iowa	802	18.7	10.6	13	7.9	2,3	9.4	2.7
Omaha, Nebr	667	18.0	10.1	14	7.8	1-4	8.8	2.3
Kansas City, Mo	386	21.0	12.3	16	8.6	1	10.0	3.7
Ohio River.								
Parkersburg, W. Va	786	38.0	7.0	18	4.0	30,31	5.4	3.0
Catlettsburg, Ky	652	50.0	15.2	19	7.6	31	9.7	7.6
Cincinnati, Ohio	500	45.0	17.2	21	10.3	31	12.3	6.9
Louisville, Ky	368	24.0	8.3	21	5.9	31	6.9	2.4
Evansville, Ind	184	30.0	13.4	23,24	8.0	15	10.0	5.4
Paducah, Ky	47	40.0	12.9	1	8.3	11	10.0	4.6
Cairo, Ill	1,140*	40.0	18.1	1	13.6	9	15.3	4.5
Monongahela River.								
Pittsburg, Pa	966†	22.0	6.9	24	2.7	1,2	5.8	4.2
Great Kanawha River.								
Charleston, W. Va	61	30.0	9.9	18	4.7	31	6.2	5.2
Scioto River.								
Circleville, Ohio	65	13.0	1.7	1	0.7	22-31	1.0	1.0
Big Sandy River.								
Louisa, Ky	26	....	18.3	18	5.5	2,3	8.2	12.8
Wabash River.								
Mount Carmel, Ill	50	15.0	2.2	1,2	1.0	29-31	1.5	1.2
Cumberland River.								
Burnside, Ky	404	50.0	15.0	17	3.0	31	6.9	12.0
Nashville, Tenn	145	40.0	13.8	12,13,21	6.1	28	10.0	7.7
Tennessee River.								
Knoxville, Tenn	640	29.0	......	......	......	......	......	......
Chattanooga, Tenn	455	33.0	9.5	14	5.4	4	7.1	4.1
Johnsonville, Tenn	94	21.0	9.3	14	6.0	9,27	7.6	3.3
Arkansas River.								
Fort Smith, Ark	351	22.0	3.1	7,11	1.2	28,29	2.0	1.9
Litttle Rock, Ark	176	23.0	4.3	5	2.5	31	8.4	1.8
Red River.								
Shreveport, La	449	29.2	5.8	8	−1.2	29	2.0	7.0
James River.								
Lynchburg, Va	251	18.0	4.3	23	1.7	10,11	2.4	2.6
Congaree River.								
Columbia, S. C	....	15.0	3.5	8,13	1.0	31	2.2	2.5
Savannah River.								
Augusta, Ga	140	32.6	15.5	28	8.4	22	10.4	7.1
Alabama River.								
Montgomery, Ala	215	48.0	10.4	11	4.0	24	7.2	6.4
Willamette River.								
Portland, Oreg	....	15.0	16.8	31	8.9	1	12.9	7.4
Sacramento River.								
Red Bluff, Cal	....	20.0	11.0	7	5.2	25	7.7	5.8
Sacramento, Cal	....	28.0	24.8	9	22.8	1,26,30,31	23.5	2.0

*To mouth of Mississippi River.

†To mouth of Ohio River.

TABLE VIII.—*Temperature of the wet-bulb thermometer, May, 1895.*

Stations.	Local time faster or slower than 75th meridian time.	8 A. M.			8 P. M.		
		Max.	Min.	Mean.	Max.	Min.	Mean.
New England.	h. m.	°	°	°	°	°	°
Eastport, Me	32 F.	61	32	44	57	32	45
Portland, Me	19 F.	71	41	52	67	38	51
Northfield, Vt	9 F.	66	34	50	70	31	52
Boston, Mass	16 F.	65	38	51	69	38	53
Nantucket, Mass	20 F.	62	42	51	65	39	50
Woods Holl, Mass	17 F.	.....	.....	.....	66	36	50
Block Island, R. I	14 F.	66	41	50	69	40	50
New Haven, Conn	8 F.	71	39	52	71	39	53
New London, Conn	12 F.	70	42	52	72	42	53
Middle Atlantic States.							
Albany, N. Y	5 F.	71	38	53	74	38	56
New York, N. Y	4 F.	70	39	52	72	41	54
Harrisburg, Pa	7 S.	73	35	54	76	41	58
Philadelphia, Pa	0	72	37	54	76	42	56
Baltimore, Md	6 S.	72	37	54	75	39	57
Washington, D. C	8 S.	71	37	55	74	40	57
Lynchburg, Va	16 S.	69	42	56	74	42	59
Norfolk, Va	5 S.	70	46	58	78	50	60
South Atlantic States.							
Charlotte, N. C	23 S.	68	41	57	70	43	59
Hatteras, N. C	2 S.	72	46	62	75	49	62
Kittyhawk, N. C	3 S.	72	44	59	74	48	58
Raleigh, N. C	14 S.	70	42	58	76	46	61
Wilmington, N. C	12 S.	72	44	62	73	50	63
Charleston, S. C	20 S.	73	46	64	74	50	65
Augusta, Ga	27 S.	71	45	61	74	48	63
Savannah, Ga	24 S.	73	48	65	73	50	66
Jacksonville, Fla	26 S.	76	49	67	74	52	67
Florida Peninsula.							
Jupiter, Fla	20 S.	77	63	72	76	64	71
Key West, Fla	27 S.	77	65	74	76	66	73
Tampa, Fla	30 S.	79	53	71	79	62	71
Titusville, Fla	23 S.	76	58	71	78	61	70
Eastern Gulf States.							
Atlanta, Ga	37 S.	68	44	59	70	45	61
Pensacola, Fla	49 S.	75	51	68	76	53	69
Mobile, Ala	52 S.	74	50	66	77	54	69
Montgomery, Ala	45 S.	72	49	63	75	52	66
Meridian, Miss	55 S.	72	50	63	75	53	65
Vicksburg, Miss	1 03 S.	72	50	62	74	54	65
New Orleans, La	1 00 S.	75	51	67	78	58	69
Western Gulf States.							
Shreveport, La	1 14 S.	73	49	62	77	55	66
Fort Smith, Ark	1 17 S.	73	47	59	74	51	64
Little Rock, Ark	1 08 S.	72	46	59	75	50	63
Corpus Christi, Tex	1 30 S.	78	55	71	79	58	72
Galveston, Tex	1 19 S.	74	53	68	77	58	70
Palestine, Tex	1 22 S.	73	49	62	75	54	66
San Antonio, Tex	1 34 S.	74	46	64	76	52	67
Ohio Valley and Tenn.							
Chattanooga, Tenn	41 S.	68	42	57	73	45	61
Knoxville, Tenn	36 S.	70	40	56	73	46	60
Memphis, Tenn	1 00 S.	71	44	59	74	49	63
Nashville, Tenn	47 S.	68	41	56	73	45	60
Lexington, Ky	38 S.	70	34	54	70	40	56
Louisville, Ky	43 S.	70	35	55	71	41	58
Indianapolis, Ind	44 S.	71	34	54	73	36	57
Cincinnati, Ohio	38 S.	69	33	53	72	39	56
Columbus, Ohio	32 S.	69	37	53	71	38	56
Pittsburg, Pa	20 S.	70	36	53	73	38	56
Parkersburg, W. Va	26 S.	69	36	54	72	39	58
Lower Lake Region.							
Buffalo, N. Y	15 S.	65	31	49	67	33	51
Oswego, N. Y	6 S.	67	34	51	66	35	53
Rochester, N. Y	11 S.	69	32	51	69	34	53
Erie, Pa	20 S.	70	36	52	71	36	54
Cleveland, Ohio	27 S.	70	33	51	73	37	55
Sandusky, Ohio	30 S.	71	38	53	74	38	55
Toledo, Ohio	34 S.	70	33	52	72	37	55
Detroit, Mich	32 S.	70	31	52	72	36	54
Upper Lake Region.							
Alpena, Mich	34 S.	70	28	48	73	32	49
Grand Haven, Mich	45 S.	66	33	50	69	32	52
Marquette, Mich	49 S.	68	31	47	68	32	48
Port Huron, Mich	30 S.	69	33	50	75	33	53
Sault Ste. Marie, Mich	37 S.	65	27	45	68	27	49
Chicago, Ill	50 S.	69	33	51	72	33	53

Stations.	Local time faster or slower than 75th meridian time.	8 A. M.			8 P. M.		
		Max.	Min.	Mean.	Max.	Min.	Mean.
Up. Lake Region—Con.	h. m.	°	°	°	°	°	°
Milwaukee, Wis	51 S.	68	32	48	70	33	50
Green Bay, Wis	52 S.	70	31	49	72	34	53
Duluth, Minn	1 08 S.	60	34	44	68	34	46
North Dakota.							
Moorhead, Minn	1 27 S.	64	33	46	65	40	52
St. Vincent, Minn	1 29 S.	59	31	44	63	39	50
Bismarck, N. Dak	1 42 S.	55	31	43	64	38	50
Williston, N. Dak	1 54 S.	54	28	41	57	35	48
Upper Mississippi Valley.							
St. Paul, Minn	1 12 S.	70	34	50	72	38	53
La Crosse, Wis	1 05 S.	70	31	51	74	40	56
Davenport, Iowa	1 02 S.	70	34	52	70	39	56
Des Moines, Iowa	1 14 S.	68	36	52	72	42	56
Keokuk, Iowa	1 06 S.	69	37	53	73	43	57
Cairo, Ill	56 S.	72	43	58	72	46	60
Springfield, Ill	58 S.	71	35	54	70	41	57
Hannibal, Mo	1 05 S.	70	41	55	72	41	58
St. Louis, Mo	1 01 S.	72	40	55	76	42	59
Missouri Valley.							
Columbia, Mo	1 09 S.	.....	.....	.....	73	44	59
Kansas City, Mo	1 18 S.	69	40	54	72	46	58
Springfield, Mo	1 13 S.	69	40	55	71	44	58
Omaha, Nebr	1 24 S.	66	37	51	72	44	56
Sioux City, Iowa	1 26 S.	66	35	50	69	41	55
Pierre, S. Dak	1 41 S.	57	30	47	68	40	54
Huron, S. Dak	1 32 S.	59	32	46	65	40	53
Northern Slope.							
Havre, Mont	2 19 S.	51	27	38	55	33	47
Miles City, Mont	2 03 S.	53	33	43	65	43	51
Helena, Mont	2 28 S.	48	28	38	57	35	46
Rapid City, S. Dak	1 53 S.	52	31	42	61	40	49
Cheyenne, Wyo	1 59 S.	54	30	39	60	36	47
Lander, Wyo	2 15 S.	46	30	38	51	36	46
North Platte, Nebr	1 43 S.	54	34	45	62	43	53
Middle Slope.							
Denver, Colo	2 00 S.	52	31	40	53	39	47
Pueblo, Colo	1 58 S.	59	32	41	55	41	50
Concordia, Kans	1 31 S.	68	38	52	70	46	57
Dodge City, Kans	1 40 S.	68	37	49	66	44	54
Wichita, Kans	1 29 S.	70	41	55	70	48	60
Oklahoma, Okla	1 30 S.	72	44	58	75	53	64
Southern Slope.							
Abilene, Tex	1 39 S.	70	43	58	72	46	62
Amarillo, Tex	1 47 S.	62	35	48	66	43	53
Southern Plateau.							
El Paso, Tex	2 06 S.	55	38	47	57	47	54
Santa Fe, N. Mex	2 04 S.	45	30	38	54	36	45
Tucson, Ariz	2 24 S.	57	40	47	62	48	57
Yuma, Ariz	2 38 S.	62	44	54	68	51	62
Independence, Cal	2 53 S.	49	32	42	55	39	51
Middle Plateau.							
Carson City, Nev	2 59 S.	45	28	38	55	36	47
Winnemucca, Nev	2 51 S.	46	28	37	54	37	46
Salt Lake City, Utah	2 27 S.	53	33	44	60	38	50
Northern Plateau.							
Baker City, Oreg	2 51 S.	48	26	37	59	38	48
Idaho Falls, Idaho	2 28 S.	52	27	39	55	38	48
Spokane, Wash	2 49 S.	48	32	41	58	39	48
Walla Walla, Wash	2 53 S.	52	38	44	65	46	53
N. Pac. Coast Region.							
Fort Canby, Wash	3 16 S.	54	43	48	59	46	50
Port Angeles, Wash	3 14 S.	50	34	43	54	43	48
Seattle, Wash	3 09 S.	52	40	45	59	43	50
Tatoosh Island, Wash	3 19 S.	51	41	46	53	44	48
Portland, Oreg	3 11 S.	54	38	46	63	43	51
Roseburg, Oreg	3 13 S.	56	32	45	67	45	53
Mid. Pac. Coast Region.							
Eureka, Cal	3 17 S.	56	43	48	58	47	51
Red Bluff, Cal	3 09 S.	57	40	50	68	49	58
Sacramento, Cal	3 06 S.	59	44	51	66	51	58
San Francisco, Cal	3 10 S.	58	45	50	68	49	54
S. Pac. Coast Region.							
Fresno, Cal	2 59 S.	57	41	49	64	50	58
Los Angeles, Cal	2 53 S.	58	45	53	66	53	59
San Diego, Cal	2 49 S.	58	50	55	65	51	57
San Luis Obispo, Cal	3 03 S.	58	40	48	64	48	54

TABLE IX.—*Resultant winds from observations at 8 a. m. and 8 p. m., daily, during May, 1895.*

Stations.	Component direction from—				Resultant.	
	N.	S.	E.	W.	Direction from—	Duration.
New England.	*Hours.*	*Hours.*	*Hours.*	*Hours.*	°	*Hours.*
Eastport, Me	15	32	10	20	s. 30 w.	20
Portland, Me	10	29	12	21	s. 25 w.	21
Northfield, Vt	23	32	1	12	s. 51 w.	14
Boston, Mass	14	22	10	29	s. 67 w.	21
Nantucket, Mass	20	11	13	33	n. 66 w.	22
Woods Holl, Mass	4	20	5	9	s. 14 w.	16
Block Island, R. I	13	22	15	32	s. 62 w.	19
New Haven, Conn	18	26	13	18	s. 32 w.	9
New London, Conn	17	24	10	27	s. 68 w.	18
Middle Atlantic States.						
Albany, N. Y	8	32	9	20	s. 25 w.	26
New York, N. Y	17	17	11	23	w.	12
Harrisburg, Pa	9	23	15	23	s. 30 w	16
Philadelphia, Pa	15	25	15	22	s. 35 w.	12
Baltimore, Md	16	22	23	20	s. 27 e.	7
Washington, D. C	17	21	18	18	s.	4
Lynchburg, Va	17	20	23	18	s. 59 e.	6
Norfolk, Va	26	20	23	10	n. 65 e.	14
South Atlantic States.						
Charlotte, N. C	11	26	20	17	s. 11 e.	15
Hatteras, N. C	21	17	18	15	n. 37 e.	5
Kittyhawk, N. C	22	16	27	15	n. 63 e.	13
Raleigh, N. C	21	21	16	17	w.	1
Wilmington, N. C	18	24	18	19	s. 9 w.	6
Charleston, S. C	15	25	23	14	s. 42 e.	14
Augusta, Ga	15	21	26	14	s. 63 e.	13
Savannah, Ga	15	24	25	10	s. 59 e.	18
Jacksonville, Fla	21	13	33	11	n. 70 e.	23
Florida Peninsula.						
Jupiter, Fla	14	20	30	11	s. 72 e.	20
Key West, Fla	13	18	39	3	s. 82 e.	36
Tampa, Fla	20	14	28	17	n. 61 e.	12
Titusville, Fla	17	9	33	13	n. 68 e.	22
Eastern Gulf States.						
Atlanta, Ga	18	17	28	14	n. 86 e.	14
Pensacola, Fla	14	28	22	17	s. 30 e.	15
Mobile, Ala	22	24	13	9	s. 63 e.	4
Montgomery, Ala	16	22	30	11	s. 72 e.	20
Meridian, Miss	18	23	29	7	s. 77 e.	23
Vicksburg, Miss	12	23	28	12	s. 56 e.	19
New Orleans, La	17	27	29	6	s. 67 e.	25
Western Gulf States.						
Shreveport, La	12	29	27	10	s. 45 e.	24
Fort Smith, Ark	10	18	36	5	s. 76 e.	32
Little Rock, Ark	16	32	20	10	s. 32 e.	19
Corpus Christi, Tex	12	33	38	1	s. 60 e.	42
Galveston, Tex	10	34	27	5	s. 42 e.	33
Palestine, Tex	10	30	24	8	s. 39 e.	26
San Antonio, Tex	17	21	32	1	s. 83 e.	31
Ohio Valley and Tennessee.						
Chattanooga, Tenn	17	22	22	12	s. 63 e.	11
Knoxville, Tenn	15	15	26	16	e.	10
Memphis, Tenn	15	21	26	12	s. 67 e.	15
Nashville, Tenn	18	29	16	13	s. 15 e.	11
Lexington, Ky	10	31	17	16	s. 3 e.	21
Louisville, Ky	15	27	18	12	s. 27 e.	13
Indianapolis, Ind	15	32	13	17	s. 13 w.	18
Cincinnati, Ohio	12	30	23	14	s. 27 e.	20
Columbus, Ohio	12	29	17	19	s. 7 w.	17
Pittsburg, Pa	13	25	13	22	s. 37 w.	15
Parkersburg, W. Va	9	18	30	13	s. 62 e.	19
Lower Lake Region.						
Buffalo, N. Y	11	22	8	38	s. 70 w.	32
Oswego, N. Y	6	27	10	26	s. 37 w.	26
Rochester, N. Y	11	33	10	36	s. 65 w.	29
Erie, Pa	12	26	11	25	s. 45 w.	20
Cleveland, Ohio	17	24	22	13	s. 52 e.	11
Sandusky, Ohio	11	26	21	17	s. 15 e.	16
Toledo, Ohio	12	20	11	30	s. 67 w.	21
Detroit, Mich	12	27	17	24	s. 25 w.	17
Upper Lake Region.						
Alpena, Mich	16	26	19	18	s. 6 e.	10
Grand Haven, Mich	14	25	15	22	s. 32 w.	13
Marquette, Mich	25	21	12	20	n. 63 w.	9
Port Huron, Mich	11	37	10	18	s. 17 w.	27
Sault Ste. Marie, Mich	15	20	23	22	s. 11 e.	5
Chicago, Ill	14	28	16	16	s.	14

Stations.	Component direction from—				Resultant.	
	N.	S.	E.	W.	Direction from—	Duration.
Upper Lake Region—Cont'd.	*Hours.*	*Hours.*	*Hours.*	*Hours.*	°	*Hours.*
Milwaukee, Wis	17	23	23	14	s. 56 e.	11
Green Bay, Wis	17	44	12	11	s. 3 e.	17
Duluth, Minn	35	8	25	13	n. 24 e.	30
North Dakota.						
Moorhead, Minn	27	21	12	12	n.	6
St. Vincent, Minn	26	20	14	14	n.	6
Bismarck, N. Dak	32	12	13	15	n. 6 w.	20
Williston, N. Dak	30	18	17	22	n. 68 w.	5
Upper Mississippi Valley.						
St. Paul, Minn	15	27	23	17	s. 27 e.	13
La Crosse, Wis	13	40	8	8	s.	27
Davenport, Iowa	13	28	18	18	s.	15
Des Moines, Iowa	14	30	12	20	s. 27 w.	18
Keokuk, Iowa	11	34	12	25	s. 29 w.	26
Cairo, Ill	16	28	19	11	s. 34 e.	14
Springfield, Ill	13	37	8	17	s. 21 w.	26
Hannibal Mo	11	28	15	20	s. 16 w.	18
St. Louis, Mo	11	37	17	12	s. 11 e.	26
Missouri Valley.						
Columbia, Mo	6	16	13	5	s. 39 e.	13
Kansas City, Mo	13	38	20	7	s. 27 e.	28
Springfield, Mo	13	34	18	10	s. 21 e.	22
Omaha, Nebr	17	28	20	15	s. 24 e.	13
Sioux City, Iowa	19	27	10	16	s. 37 w.	10
Pierre, S. Dak	26	14	19	18	n. 5 e.	12
Huron, S. Dak	27	20	12	18	n. 41 w.	9
Northern Slope.						
Havre, Mont	17	13	15	31	n. 76 w.	16
Miles City, Mont	18	16	15	26	n. 80 w.	11
Helena, Mont	14	16	5	42	s. 87 w.	37
Rapid City, S. Dak	24	13	14	21	n. 32 w.	13
Cheyenne, Wyo	27	15	8	24	n. 53 w.	20
Lander, Wyo	18	22	12	28	s. 76 w.	16
North Platte, Nebr	17	23	15	21	s. 45 w.	8
Middle Slope.						
Denver, Colo	21	22	13	19	s. 80 w.	6
Pueblo, Colo	24	17	17	20	n. 23 w.	8
Concordia, Kans	14	33	15	11	s. 12 e.	19
Dodge City, Kans	19	26	16	7	s. 52 e.	11
Wichita, Kans	14	34	15	8	s. 19 e.	21
Oklahoma, Okla	11	39	18	6	s. 23 e.	30
Southern Slope.						
Abilene, Tex	10	35	28	5	s. 43 e.	34
Amarillo, Tex	12	37	9	8	s. 2 e.	35
Southern Plateau.						
El Paso, Tex	24	7	19	29	n. 30 w.	20
Santa Fe, N. Mex	16	23	19	22	s. 23 w.	8
Tucson, Ariz	9	22	22	21	s. 4 e.	13
Yuma, Ariz	13	23	7	29	s. 66 w.	24
Independence, Cal	23	12	8	35	n. 68 w.	29
Middle Plateau.						
Carson City, Nev	10	20	11	36	s. 68 w.	27
Winnemucca, Nev	14	20	14	27	s. 65 w.	14
Salt Lake City, Utah	21	19	21	19	n. 45 e.	3
Northern Plateau.						
Baker City, Oreg	22	27	14	17	s. 31 w.	6
Idaho Falls, Idaho	15	37	9	11	s. 5 w.	22
Spokane, Wash	10	30	20	15	s. 14 e.	21
Walla Walla, Wash	11	31	9	18	s. 24 w.	22
North Pacific Coast Region.						
Fort Canby, Wash	19	23	7	22	s. 75 w.	16
Port Angeles, Wash	4	25	7	30	s. 48 w.	31
Seattle, Wash	14	32	14	15	s. 3 w.	18
Tatoosh Island, Wash	3	23	19	25	s. 17 w.	21
Portland, Oreg	15	29	15	19	s. 16 w.	15
Roseburg, Oreg	26	14	16	21	n. 23 w.	13
Middle Pacific Coast Region.						
Eureka, Cal	22	18	11	27	n. 76 w.	16
Red Bluff, Cal	21	24	20	15	s. 59 e.	6
Sacramento, Cal	12	37	7	21	s. 29 w.	29
San Francisco, Cal	7	11	1	47	s. 85 w.	46
South Pacific Coast Region.						
Fresno, Cal	29	2	1	46	n. 59 w.	52
Los Angeles, Cal	10	10	16	35	w.	19
San Diego, Cal	8	20	7	35	s. 67 w.	30
San Luis Obispo, Cal	29	7	5	34	n. 53 w.	36

TABLE X.—*Thunderstorms and auroras, May, 1895.*

States.	No. of stations.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total. No.	Total. Days.	
Alabama	58	T.	....	2	1	1	4	5	8	2	4	4	1	....	....	....	....	....	1	....	1	3	3	....	....	1	....	5	....	2	1	1	....	50	19	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Arizona	44	T.	...	1	....	...	....	....	....	....	....	....	....	2	1	....	....	....	1	5	....	3	3	1	2	....	....	....	....	....	....	....	....	19	9	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Arkansas	49	T.	12	....	....	8	6	3	3	....	....	8	3	....	....	....	6	3	....	....	....	....	....	....	....	....	2	1	....	4	3	2	...	64	14	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
California	200	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	1	1	...	....	....	1	....	5	1	1	2	4	....	....	1	19	10	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Colorado	87	T.	2	4	2	....	1	5	....	1	....	1	....	....	....	1	2	2	....	....	7	9	6	1	6	5	1	....	....	....	2	4	....	62	19	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	1	A.
Connecticut	23	T.	....	...	....	....	....	....	1	3	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	6	....	....	5	16	5	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Delaware	6	T.	....	....	....	....	....	....	1	....	....	....	....	....	....	1	....	....	....	....	....	1	1	....	....	....	....	....	1	....	....	....	....	5	5	T.
		A.	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1	....	....	....	....	....	3	3	A.
Dist. of Columbia	4	T.	....	....	....	....	....	....	1	....	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	3	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Florida	37	T.	8	7	4	3	....	6	8	5	13	7	8	6	....	....	....	....	9	9	6	4	12	5	3	6	3	15	5	2	....	2	....	156	24	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Georgia	60	T.	3	4	....	2	7	6	4	6	3	4	4	....	2	....	....	1	2	1	....	....	4	....	....	3	4	8	....	....	....	....	....	68	18	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Idaho	32	T.	1	....	2	3	1	2	....	....	....	....	....	....	....	....	....	....	....	....	3	7	1	....	....	....	2	4	1	....	....	....	1	28	12	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	2	A.
Illinois	83	T.	5	8	7	16	17	10	13	9	....	17	9	1	....	1	6	....	3	12	....	....	....	....	....	....	5	....	....	....	2	1	1	143	19	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	....	....	....	2	2	A.
Indiana	44	T.	....	7	....	....	2	4	4	2	....	4	2	....	2	....	....	....	....	2	1	....	....	....	....	....	....	....	....	....	2	....	1	33	12	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	1	A.
Indian Territory	7	T.	1	....	....	2	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	1	7	5	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Iowa	90	T.	19	9	24	15	17	12	8	1	1	6	1	6	1	....	2	....	2	....	1	1	1	....	....	....	....	4	1	1	8	1	142	23	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	1	....	....	....	....	....	....	2	2	A.
Kansas	80	T.	8	3	11	1	4	7	3	1	....	4	1	1	....	1	2	1	....	....	2	3	....	....	....	5	....	....	....	2	9	2	71	20	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	1	....	....	3	3	A.
Kentucky	44	T.	....	5	2	....	3	5	4	....	1	6	2	....	6	....	....	....	....	....	....	....	....	....	....	....	1	3	....	....	3	....	....	41	12	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Louisiana	50	T.	5	....	....	2	6	10	12	15	8	7	6	....	....	....	....	5	8	3	....	8	7	4	6	10	8	5	....	1	5	2	8	151	23	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Maine	18	T.	1	....	....	3	1	1	2	5	....	....	7	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	2	24	10	T.
		A.	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	....	1	....	....	....	1	....	....	....	....	....	....	....	....	....	....	4	4	A.
Maryland	44	T.	....	....	....	....	1	....	10	6	6	2	....	....	....	3	1	....	....	....	3	5	....	....	....	....	....	....	5	....	....	....	....	42	10	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Massachusetts	82	T.	....	1	....	21	3	3	....	12	1	....	....	....	....	2	....	....	1	....	....	....	....	....	1	....	....	....	5	....	....	....	5	55	11	T.
		A.	....	1	....	....	....	....	1	....	1	....	....	....	....	1	....	....	....	....	1	....	....	....	....	....	....	1	....	....	1	....	....	7	7	A.
Michigan	87	T.	....	8	10	4	5	8	7	5	4	12	6	....	1	....	....	....	....	1	....	....	....	....	....	....	....	....	1	1	2	75	15	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	A.
Minnesota	72	T.	20	12	26	14	15	8	5	....	10	7	....	4	....	....	....	....	1	1	....	1	....	....	....	5	4	....	2	11	5	2	1	154	20	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	....	....	....	....	1	....	....	....	....	....	....	2	2	A.
Mississippi	51	T.	7	2	....	....	1	7	6	6	8	2	....	....	....	....	....	....	....	....	....	....	1	....	1	5	2	1	....	2	1	1	1	61	18	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Missouri	105	T.	32	14	12	29	6	17	7	....	....	17	2	6	2	7	21	1	1	11	10	7	....	....	....	1	12	2	1	....	2	14	9	243	25	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	1	A.
Montana	34	T.	1	2	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	2	....	....	....	....	2	....	....	....	....	....	10	6	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	1	1	A.
Nebraska	119	T.	12	6	3	2	5	3	....	....	1	2	1	....	....	....	....	....	....	....	....	....	....	....	....	2	2	....	....	....	5	9	....	53	13	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	1	A.
Nevada	48	T.	1	1	....	....	....	....	....	....	....	....	....	....	....	....	7	4	3	1	4	....	....	....	2	....	....	....	1	....	....	....	....	24	9	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	1	A.
New Hampshire	22	T.	....	....	....	2	....	....	....	9	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	4	....	4	....	....	20	5	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	1	....	....	....	2	2	A.
New Jersey	55	T.	....	....	....	....	....	1	....	2	1	1	9	....	....	4	1	....	....	....	....	1	....	....	....	....	....	....	15	....	....	1	7	43	11	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	2	....	3	2	A.
New Mexico	32	T.	....	....	....	....	....	....	....	....	....	....	....	1	....	1	....	....	1	....	1	....	1	....	1	....	....	....	....	....	....	....	....	6	6	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
New York	84	T.	....	....	....	3	1	....	19	12	....	....	19	....	....	....	....	....	1	....	.	....	....	1	....	....	....	11	4	1	....	1	2	75	12	T.
		A.	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	2	2	A.
North Carolina	55	T.	....	....	....	1	3	11	3	2	8	8	11	1	....	3	....	10	6	1	....	1	4	....	1	....	1	1	1	....	....	....	....	77	19	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
North Dakota	36	T.	3	1	1	1	....	....	1	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	1	....	....	....	2	....	....	....	11	8	T.
		A.	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	1	1	1	2	3	1	....	....	....	....	....	....	....	....	....	12	8	A.
Ohio	146	T.	1	9	1	10	16	36	34	31	5	22	33	3	2	....	....	....	....	....	7	....	....	....	....	....	1	22	....	....	1	2	....	236	18	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	2	2	1	....	....	7	4	A.
Oklahoma	21	T.	1	....	....	....	....	....	....	....	....	....	....	....	....	1	1	....	.	....	....	....	....	....	....	1	....	....	....	....	1	....	....	5	5	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Oregon	68	T.	....	....	....	....	....	....	1	....	....	....	....	....	....	....	3	1	....	1	....	....	....	....	....	....	....	2	3	....	....	....	....	11	6	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Pennsylvania	91	T.	....	....	....	1	....	3	15	21	1	2	20	1	....	....	....	....	....	....	1	....	....	....	....	....	1	5	6	....	....	....	6	83	13	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	1	A.
Rhode Island	8	T.	....	....	....	....	....	1	1	....	....	....	.	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	4	4	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
South Carolina	42	T.	7	....	....	....	2	7	4	....	2	4	8	....	....	....	....	6	4	....	....	1	5	2	....	2	3	6	2	....	....	....	....	65	15	T.
		A.	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
South Dakota	43	T.	7	3	5	....	4	5	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	1	2	5	1	....	....	3	3	2	....	43	13	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Tennessee	44	T.	1	6	1	2	8	8	9	7	7	6	4	2	5	....	....	1	....	....	....	1	1	....	....	....	1	5	....	....	2	1	1	79	21	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Texas	84	T.	10	....	....	15	7	3	1	....	2	1	1	....	....	....	4	5	2	1	1	7	5	4	2	5	11	2	....	2	1	7	3	102	24	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Utah	33	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	2	4	2	2	1	1	....	....	....	....	1	....	....	2	17	10	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Vermont	15	T.	....	....	....	....	....	....	5	1	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	4	....	12	5	T.
		A.	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	A.
Virginia	43	T.	....	....	1	1	2	3	5	1	4	4	5	1	....	2	....	....	....	1	4	7	8	....	....	....	....	....	....	....	....	....	....	49	15	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	A.
Washington	49	T.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	1	....	....	....	....	....	3	1	....	....	....	....	8	5	T.
		A.	....	....	....	....	....	....	....	....	....	1	1	1	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	6	6	A.
West Virginia	43	T.	....	....	1	....	4	5	5	4	2	3	3	....	....	....	2	....	....	....	....	2	1	....	....	....	....	3	....	....	....	....	....	35	12	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Wisconsin	67	T.	5	25	26	17	17	11	12	1	4	11	2	2	1	1	....	1	8	3	2	....	....	....	....	....	1	1	....	....	1	12	2	166	23	T.
		A.	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	2	....	....	....	5	3	A.
Wyoming	12	T.	....	.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	2	....	3	2	T.
		A.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	0	0	A.
Sums	2,763	T.	173	140	142	179	169	216	228	174	97	180	171	36	25	27	53	44	57	57	58	78	67	22	28	58	66	108	69	37	44	93	67	2969	....	T.
		A.	0	1	1	2	0	0	1	0	1	3	3	2	1	4	2	1	3	3	3	4	4	1	0	1	2	2	3	9	10	4	1	72	....	A.

TABLE XI.—*Hourly sunshine as deduced from sunshine recorders, May, 1895.*

Stations.	Instrument.	Percentages for each hour of local mean time ending with the respective hour.																Monthly summary.			
		A. M.								P. M.								Instrumental record.			Personal estimate.
		5	6	7	8	9	10	11	Noon.	1	2	3	4	5	6	7	8	Actual.	Possible.	Per cent of possible.	
																		Hours.	*Hours.*		
Atlanta, Ga	T.	55	58	54	57	64	70	76	78	79	76	70	68	63	51	37	67	278.9	431.8	65	53
Baltimore, Md	T.	50	42	42	45	51	56	64	73	76	78	63	57	48	33	29	33	239.5	444.5	54	48
Bismarck, N. Dak	P.	43	42	48	53	59	54	50	51	49	53	44	38	39	32	42	41	216.2	466.7	46	45
Boston, Mass	T.	50	52	57	56	65	73	80	79	78	80	74	65	48	48	46	21	286.8	453.6	63	46
Buffalo, N. Y	T.	47	39	56	81	88	89	86	85	87	84	83	82	76	68	39	51	333.2	454.6	73	54
Chicago, Ill	T.	60	53	70	77	81	85	89	83	87	85	80	78	71	56	42	54	332.1	451.9	73	62
Cincinnati, Ohio	T.	61	65	62	61	72	75	73	74	79	76	75	77	76	76	67	81	319.4	444.1	72	55
Do	P.	61	65	65	62	69	71	71	66	67	71	66	65	64	67	68	81	296.7	444.1	67	55
Cleveland, Ohio	P.	64	66	70	68	74	76	75	71	73	69	66	66	68	69	50	58	309.1	450.6	69	58
Columbus, Ohio	T.	41	38	56	71	77	80	81	79	77	76	77	78	74	61	48	54	307.4	446.4	69	49
Denver, Colo	P.	66	64	77	80	75	70	75	75	77	71	69	59	54	55	53	43	308.0	445.7	68	51
Des Moines, Iowa	T.	62	54	53	59	60	61	62	60	64	66	66	60	54	45	47	62	262.0	451.3	58	42
Detroit, Mich	T.	55	50	58	71	77	74	72	71	72	77	80	73	66	67	51	57	307.9	453.2	68	60
Dodge City, Kans	P.	40	53	65	65	67	76	75	74	76	76	79	75	67	60	56	46	302.4	441.1	69	61
Eastport, Me	P.	13	17	23	34	44	44	49	55	62	67	68	66	61	64	39	25	219.5	460.1	48	36
Galveston, Tex	P.	.....	39	47	53	57	73	73	70	69	67	68	65	59	41	29	.....	247.4	422.3	59	58
Helena, Mont	P.	50	58	66	67	65	70	70	62	61	64	66	59	53	43	40	36	276.0	466.2	59	50
Kansas City, Mo	P.	58	58	57	67	74	75	77	70	77	79	78	79	67	58	38	43	301.2	444.0	68	52
Key West, Fla	T.	.....	73	69	82	84	88	90	90	83	91	86	83	77	67	50	.....	332.5	414.3	80	59
Little Rock, Ark	T.	24	39	39	43	57	67	74	82	81	79	67	57	55	52	53	67	261.3	434.3	60	41
Louisville, Ky	T.	56	55	55	55	57	68	65	75	76	74	72	73	61	53	56	63	282.0	441.8	64	50
Marquette, Mich	T.	10	33	55	62	74	78	78	82	85	84	78	74	66	49	36	13	289.8	466.0	62	35
Memphis, Tenn	P.	50	49	56	65	70	70	68	63	66	71	66	73	75	60	38	50	276.9	434.9	64	58
New Haven, Conn	T.	22	27	41	49	68	75	81	84	87	93	85	82	76	52	26	8	289.6	450.1	64	60
New Orleans, La	T.	.....	49	53	56	61	64	58	58	67	60	57	58	51	40	31	.....	333.5	423.6	55	55
New York, N. Y	T.	31	23	32	47	59	63	72	75	75	83	76	75	55	30	17	28	247.4	449.1	55	50
Norfolk, Va	T.	39	29	44	56	66	71	73	73	77	75	68	69	68	51	39	58	267.6	438.5	61	62
Philadelphia, Pa	T.	40	35	40	43	52	62	72	73	76	78	74	72	69	60	53	35	270.9	446.3	61	44
Portland, Me	T.	5	32	55	66	74	84	89	96	92	89	91	79	69	57	19	0	308.9	456.9	68	39
Portland, Oreg	T.	21	19	25	32	36	45	57	70	70	63	55	49	46	36	35	34	205.4	462.3	44	40
Do	P.	21	20	29	34	38	44	54	57	57	57	57	53	50	47	39	34	204.4	462.3	44	40
Rochester, N. Y	T.	53	53	63	75	86	87	87	86	81	76	74	81	68	67	43	42	328.3	455.0	72	58
St. Louis, Mo	T.	62	58	66	79	85	90	90	92	93	95	90	88	82	67	55	61	356.1	443.3	80	59
Salt Lake City, Utah	T.	51	48	50	61	69	75	81	83	79	77	79	75	65	55	44	38	298.5	448.4	67	45
Do	P.	51	50	59	65	67	68	81	78	71	72	78	76	69	67	49	38	301.4	448.4	67	45
San Diego, Cal	P.	0	8	20	24	35	49	63	69	71	72	73	75	64	55	17	30	214.8	430.1	50	54
San Francisco, Cal	T.	2	28	59	65	75	86	92	93	96	96	93	90	85	64	36	0	326.8	441.5	74	65
Santa Fe, N. Mex	P.	39	43	69	75	72	77	75	75	73	68	66	66	54	45	33	27	276.4	435.8	63	54
Savannah, Ga	P.	30	32	45	48	68	66	70	67	73	77	72	57	59	49	33	.....	251.5	428.2	59	51
Seattle, Wash	T.	22	23	25	34	46	56	58	62	61	65	67	64	51	34	26	25	216.2	469.6	46	32
Spokane, Wash	P.	19	35	52	60	65	65	63	52	38	41	41	44	44	40	37	26	217.6	469.8	46	30
Tucson, Ariz	P.	82	84	88	91	98	99	90	90	90	92	85	90	81	68	66	.....	372.1	428.6	87	65
Vicksburg, Miss	T.	33	39	38	48	58	66	75	75	80	87	83	72	66	49	35	0	208.1	429.0	62	55
Washington, D. C	T.	46	35	41	50	50	58	75	79	82	82	79	73	66	54	42	49	273.1	443.9	62	51
Wilmington, N. C	T.	9	13	27	45	52	60	64	67	58	53	56	52	39	29	6	0	192.8	432.7	45	45

TABLE XII.—*Hourly precipitation, May, 1895.*

Stations.	1 a. m.	2 a. m.	3 a. m.	4 a. m.	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon.	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	9 p. m.	10 p. m.	11 p. m.	Midnight.	Total.
Atlanta, Ga.*	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.04	0.06	0.09	0.13	0.29	0.88	0.47	0.25	0.04	0.52	0.09	0.06	0.01	0.00	T.	0.01	0.00	3.87
Baltimore, Md	0.27	0.22	0.16	0.26	0.12	0.23	0.09	0.13	0.28	0.13	0.17	0.04	0.08	0.12	0.03	0.06	0.04	0.04	0.05	0.03	0.01	0.19	0.11	0.02	3.02
Bismarck, N. Dak	0.13	0.22	0.98	0.26	0.10	0.12	0.20	0.06	0.01	T.	T.	0.00	0.01	0.04	T.	0.02	T.	0.44	0.08	0.11	0.26	0.36	0.11	0.13	3.69
Boston, Mass	0.12	0.15	0.10	0.06	0.14	0.10	0.05	0.12	0.10	0.07	0.07	T.	0.28	0.10	0.42	0.23	0.01	0.01	0.22	T.	0.28	T.	0.02	0.03	2.68
Buffalo, N. Y	0.00	0.00	0.02	0.04	0.04	0.01	0.05	0.20	0.25	0.21	0.12	0.03	0.01	T.	0.10	0.06	0.06	0.10	0.14	0.13	0.41	0.09	0.12	0.00	2.19
Cincinnati, Ohio	0.01	0.00	0.00	0.00	0.02	0.03	0.02	0.02	0.04	0.03	0.06	0.26	0.34	0.01	0.11	0.23	0.30	0.07	0.01	0.01	T.	0.16	0.03	T.	1.76
Cleveland, Ohio	0.04	0.06	T.	0.00	0.00	0.08	0.05	T.	0.01	0.02	0.00	T.	0.05	0.25	0.48	0.66	0.07	0.04	T.	0.02	T.	T.	T.	0.01	1.88
Denver, Colo	0.09	0.09	0.10	0.04	0.06	0.21	0.25	0.12	0.06	0.17	0.20	0.11	0.09	0.04	0.04	0.07	0.05	0.08	0.16	0.23	0.17	0.09	0.13	0.21	2.86
Detroit, Mich	0.15	0.11	0.12	0.05	0.09	0.03	0.04	0.17	0.05	0.03	0.16	0.29	0.11	0.10	0.06	0.06	0.03	0.04	0.06	0.07	0.02	0.10	0.32	0.35	2.61
Dodge City, Kans.*	0.00	0.00	0.00	0.01	0.02	0.03	0.03	0.04	0.44	0.08	0.10	0.00	0.00	0.00	0.00	T.	0.04	0.00	T.	T.	0.00	0.00	0.00	0.00	0.79
Duluth, Minn	0.14	0.23	0.18	0.08	0.06	0.03	0.09	0.34	T.	0.02	0.03	0.11	0.05	0.04	0.05	0.03	0.08	0.07	0.15	0.20	0.16	0.08	T.	0.03	2.25
Eastport, Me	0.04	0.02	0.04	0.02	0.04	0.05	0.01	0.00	T.	0.02	0.04	0.08	0.05	0.11	0.09	0.18	0.06	0.04	0.11	0.15	0.01	0.06	0.04	0.03	1.29
Galveston, Tex	T.	0.19	0.06	0.00	0.00	0.00	0.10	0.22	0.24	0.16	0.53	0.26	0.25	0.13	0.11	0.09	0.07	0.25	0.22	0.17	0.90	1.04	0.24	0.11	5.34
Indianapolis, Ind	0.00	0.00	0.00	0.06	0.04	0.01	0.04	0.08	0.15	0.09	0.13	0.18	0.12	0.07	T.	T.	0.03	T.	0.02	0.01	0.03	T.	0.01	T.	1.07
Jacksonville, Fla	0.01	T.	0.01	0.00	0.00	0.00	0.00	T.	T.	0.01	T.	0.11	0.01	0.25	0.37	0.05	0.47	0.20	0.08	0.16	0.01	0.26	0.18	0.08	2.26
Jupiter, Fla	T.	0.01	0.01	0.01	0.01	0.32	0.02	0.02	0.16	0.06	0.02	0.13	0.27	0.99	0.90	0.23	0.18	0.21	1.27	0.48	T.	0.00	0.73	0.02	6.05
Kansas City, Mo	0.24	0.30	0.61	0.28	0.30	0.34	0.11	0.03	0.01	0.02	0.08	0.15	0.10	0.01	T.	0.14	T.	T.	0.01	0.21	0.06	T.	0.51	0.36	3.87
Key West, Fla	0.07	0.14	0.00	0.00	0.00	0.00	0.01	0.00	T.	0.01	0.04	0.01	0.02	0.04	0.01	0.35	T.	0.00	0.52	T.	0.06	0.00	0.04	0.09	1.41
Little Rock, Ark	0.33	0.35	0.04	0.05	T.	0.01	T.	0.00	0.00	T.	0.10	T.	T.	0.00	0.00	0.00	T.	0.05	0.25	0.29	0.33	0.67	0.18	0.18	2.83
Louisville, Ky	0.05	0.02	0.05	0.05	0.02	0.04	0.07	0.04	0.11	0.12	0.20	0.52	0.11	0.19	0.29	0.08	0.06	0.03	0.03	0.42	0.01	T.	0.02	0.06	2.59
Marquette, Mich	0.09	0.16	0.07	0.12	0.26	0.30	0.12	0.06	0.07	0.14	0.24	0.23	0.18	0.08	0.21	0.46	0.51	0.47	0.39	0.37	0.07	0.08	0.12	0.08	4.88
Memphis, Tenn	0.02	0.02	0.01	0.06	0.09	0.06	0.01	T.	0.02	T.	T.	0.00	T.	T.	0.00	T.	T.	0.00	0.00	T.	0.06	0.03	0.02	0.06	0.46
Milwaukee, Wis.*	0.02	0.02	0.02	0.08	0.17	0.10	0.11	0.04	0.01	0.00	0.03	0.02	0.03	0.01	T.	0.19	0.28	0.39	0.15	1.26	0.33	0.51	0.12	0.16	4.23
Nantucket, Mass	0.15	0.13	0.16	0.24	0.32	0.47	0.35	0.52	0.93	0.19	0.11	0.07	0.09	0.12	0.06	0.03	0.02	0.03	0.05	0.06	0.14	0.02	0.05	0.13	4.44
Nashville, Tenn	0.12	0.03	0.07	0.06	0.05	0.11	0.15	0.15	0.12	0.13	0.04	0.02	0.01	0.14	0.30	0.26	T.	0.11	0.05	T.	T.	T.	0.04	0.06	2.02
New Orleans, La	0.10	0.05	0.05	0.05	0.45	0.04	0.46	1.17	0.90	0.42	0.01	0.07	0.17	0.35	0.10	0.51	0.28	0.30	T.	0.50	0.99	0.38	0.55	0.15	7.95
New York, N. Y	0.01	0.03	0.09	0.03	0.04	0.03	0.03	0.03	0.08	0.18	0.08	0.08	0.60	0.33	0.28	0.07	0.02	0.02	0.01	0.02	0.00	0.00	0.00	T.	2.06
Norfolk, Va	0.54	0.29	0.20	0.09	0.58	0.09	0.11	0.08	0.05	0.07	0.18	0.58	0.13	0.04	0.61	0.54	0.44	0.73	1.38	0.44	0.33	0.14	0.09	0.10	8.51
Omaha, Nebr	0.10	0.04	0.04	0.01	T.	T.	T.	T.	0.03	T.	0.00	0.00	0.00	0.03	0.00	0.07	0.06	0.16	0.38	0.01	0.04	0.01	0.00	0.10	1.11
Philadelphia, Pa	0.03	0.02	0.03	0.06	0.14	0.11	0.08	0.05	0.06	0.03	0.11	0.21	0.10	0.15	0.10	0.15	0.03	0.04	0.05	0.03	0.03	T.	0.02	0.03	1.66
Pittsburg, Pa*	0.08	0.09	0.02	0.02	0.07	0.06	0.07	0.06	0.02	0.02	0.03	0.03	0.05	0.05	0.01	0.00	0.13	0.15	0.10	0.38	0.18	0.11	0.12	0.11	1.96
Portland, Me	0.00	0.00	T.	0.03	0.03	0.04	0.06	0.08	0.05	0.04	0.02	0.03	T.	0.02	0.08	0.14	0.47	0.23	0.09	0.02	0.08	T.	0.05	0.00	1.59
Portland, Oreg. *a*	0.18	0.16	0.17	0.10	0.10	0.07	0.09	0.14	0.15	0.09	0.23	0.28	0.23	0.18	0.16	0.23	0.10	0.08	0.08	0.12	0.21	0.18	0.51	0 17	4.01
Portland, Oreg. *b*	0.15	0.15	0.15	0.08	0.07	0.05	0.07	0.15	0.12	0.07	0.20	0.27	0.18	0.15	0.05	0.23	0.10	0.05	0.08	0.11	0.20	0.22	0.44	0.16	3.50
Rochester, N. Y	0.03	0.02	0.02	T.	T.	0.01	T.	0.01	0.04	0.06	0.24	0.27	0.32	0.27	1.36	0.30	0.17	0.13	0.09	0.02	0.03	0.03	0.01	0.01	3.44
St. Louis, Mo	0.02	0.05	0.27	0.38	0.28	0.35	0.24	0.30	0.43	0.45	0.08	0.01	T.	T.	0.03	T.	0.01	0.04	0.05	T.	0.03	0.05	0.05	0.01	3.13
St. Paul, Minn	0.51	0.12	0.02	T.	T.	T.	T.	0.02	0.02	0.04	0.12	0.12	0.07	0.11	0.21	0.29	0.21	0.22	0.13	0.08	0.02	0.11	0.13	0.33	2.88
Salt Lake City, Utah	0.03	0.03	0.05	0.13	0.22	0.37	0.17	0.14	0.22	0.18	0.15	T.	0.01	0.06	0.05	0.10	0.05	0.05	0.07	0.04	0.04	0.05	0.09	0.02	2.32
San Diego, Cal	0.00	0.00	0.00	0.04	0.07	0.05	0.01	0.00	0.02	T.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19
San Francisco, Cal	0.01	0.01	0.02	0.01	T.	T.	0.01	0.02	0.04	0.02	0.08	0.04	0.02	0.03	0.05	0.16	0.01	0.04	T.	T.	0.00	0.00	0.00	0.00	0.57
Savannah, Ga	0.04	0.02	0.00	0.00	T.	0.01	0.02	0.10	0.33	0.27	0.10	0.02	T.	0.04	0.01	0.16	0 68	0.12	0.05	0.01	0.02	0.02	0.03	0.10	2.20
Seattle, Wash	0.11	0.12	0.07	0.07	0.15	0.11	0.14	0.15	0.09	0.17	0.17	0.18	0.10	0.14	0.11	0.20	0.07	0.16	0.10	0.25	0.21	0.11	0.10	0.12	3.20
Vicksburg, Miss	0.06	0.13	0.13	0.42	0.15	0.02	0.02	0.09	0.28	0.03	0.03	0.06	0.28	0.04	T.	T.	0.18	T.	T.	0.03	0.70	0.15	0.17	0.05	3.02
Washington, D. C	0.33	0.14	0.10	0.23	0.13	0.13	0.15	0.38	0.17	0.17	0.11	0.08	0.10	0.04	0.03	0.05	0.07	0.12	0.11	0.23	0.09	0.02	0.01	0.02	3.01
Wilmington, N. C	0.64	0.47	0.29	0.42	0.42	0.30	0.05	0.07	0.18	0.10	0.19	0.03	0.44	0.05	0.24	0.10	0.04	0.08	0.09	0.23	0.02	0.02	0.04	0.16	4.37

* Record incomplete. *a* Weighing gauge. *b* Float gauge.

TABLE XIII.—*Excessive precipitation, by stations, for May, 1895.*

Stations.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
	Inches.	*Inches.*		*Ins.*	*h. m.*	
Alabama.						
Fort Deposit				1.50	1 00	6
Madison Station				2.00	1 00	7
Mobile		2.50	24-25			
Oxanna	10.63	4.60	2-3			
Sturdevant				2.23	1 30	7
Do				2.04	1 30	9
Arkansas.						
Malvern				1.19	1 00	25
Winslow		2.60	29-30			
California.						
Bear Valley		2.91	25-26			
Edmanton		2.57	27			
La Forte		3.36	26			
Upper Mattole		3.44	25-26			
Colorado.						
Climax		3.00	29-30			
Divide Experiment Station		2.84	29-30			
Holyoke		2.67	29-30			
Julesburg		2.63	30-31			
Lake Moraine		2.80	29-30			
Florida.						
Avon Park		2.77	10			
Brooksville				1.25	1 00	22
Earnestville		2.73	27			
Homeland				1.04	1 00	7
Hypoluxo		3.45	10			
Merritts Island		3.59	19			
Moseley Hall				1.32	1 00	10
Do				1.60	1 00	26
Pensacola				1.40	0 45	8
Plant City		2.76	6	2.76	2 00	6
Tarpon Springs				1.15	1 00	9
Titusville		2.89	10	1.22	0 25	10
Do				1.30	0 35	24
Georgia.						
Alapaha		4.66	21			
Albany				1.50	1 00	10
Bainbridge *a*		2.77	20-21			
Diamond				2.07	0 45	5
Millen				1.72	0 30	21
Toccoa		2.60	8			
Indian Territory.						
Eufaula		4.50	30-31			
Lehigh		3.01	30-31			
Tahlequah		4.27	29-30			
Iowa.						
Corning		2.65	30			
Greenfield		2.76	30			
Keosauqua		2.60	1-2			
Lenox		2.83	30-31			
Villisca		2.60	30			
Kansas.						
Achilles		4.24	29-30	1.30	0 15	30
Burlington				1.05	1 00	30
Colby		2.85	29-30			
Dresden		3.15	30			
Emporia				2.25	1 00	5
Gibson		2.58	29-30			
Manhattan *b*				1.03	0 50	3
Morland		5.85	29-30			
New England Ranch		3.83	29-30			
Norton		4.59	29-30			
Oberlin		3.69	30-31			
Olathe				1.10	0 30	7
Wallace		2.63	30-31			
Kentucky.						
Caddo				1.30	1 00	2
Harrodsburg		2.70	15-16	2.10	2 00	6
Louisiana.						
Cheneyville				1.94	1 15	11
Donaldsonville		3.10	7-8			
Emilie		3.70	24	1.50	1 00	11
Do				1.39	0 45	20
Houma		4.50	25-26			
Lake Charles				1.75	1 00	11
Lawrence		2.70	22			
Do		4.45	24			
Melville				1.25	0 40	6
Monroe				2.12	2 10	1
New Orleans		4.68	24	1.10	1 00	24
Port Eads	10.27	7.82	24-25			
Shreveport				1.25	1 00	10
Southern University	11.85	3.80	24			
Sugar Experiment Station	12.15	3.73	23-24			
Do		2.93	24-25			
Thibodeaux		5.90	22-23			
Wallace	11.68	3.41	23-24			
Massachusetts.						
Nantucket		2.66	26-27	1.03	1 00	26
Minnesota.						
Bingham Lake		3.50	3			
Grand Meadow				1.09	1 00	3
Marfield		2.52	24			
Pokegama Falls		2.60	25			
Willmar				1.49	0 50	2
Winona				1.59	0 10	1
Mississippi.						
Bay St. Louis		2.70	24			
Biloxi		2.63	22			
Moss Point		6.79	22-24			

TABLE XIII.—*Excessive precipitation*—Continued.

Stations.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
	Inches.	*Inches.*		*Ins.*	*h. m.*	
Missouri.						
East Lynne		3.43	25			
Eight Mile		3.31	25			
Langdon		2.78	30			
Lexington		2.77	30			
Maryville		2.50	30-31			
Mt. Vernon		2.50	25			
Pickering		2.77	30			
Stellada		2.58	24-25			
Nebraska.						
Alma		4.75	29-30			
Beaver City		3.39	29-30			
Curtis		3.04	30			
Elwood		2.85	29-30			
Grand Island		4.48	29-30			
Haigler		2.50	30			
Holdrege		2.50	29			
Madrid		2.50	30			
Minden		5.05	29-30			
Nemaha		3.90	30			
Ough		2.60	30			
Palmer *a*		3.40	29-30			
Palmer *b*		2.72	29-30			
Republican		4.70	29-30			
Wilcox		4.56	29-30			
Wilsonville		3.02	29-30			
North Carolina.						
Hatteras		2.69	25-26			
Oak Ridge				1.09	1 00	6
Southport		3.53	24-25			
Ohio.						
McArthur				1.00	1 00	10
Waverly				1.00	0 40	8
Oregon.						
Bandon	11.15	2.52	25			
Gardiner	10.20					
Glenora	13.14					
Langlois	12.73	2.55	4			
Nehalem	11.64					
Pennsylvania.						
Cassandra		2.55	14			
Hollidaysburg				1.13	1 00	8
South Carolina.						
Batesburg		3.00	11-12			
Greenwood		3.10	23-24			
Watts		2.98	24-25			
Tennessee.						
Mt. Carmel		2.96	7			
Rugby		2.50	5			
Texas.						
Austin *a*	14.10	2.70	4			
Do		4.30	18			
Do		3.10	21			
Do		2.65	21			
Brady	12.54	3.20	4-5	1.00	1 00	16
Brenham		4.07	29			
Do				1.35	0 30	16
Burnet		2.95	16-17			
Camp Eagle Pass		3.16	4			
College Station	12.44	3.01	29			
Do		2.62	22			
Corpus Christi		2.91	4-5			
Corsicana *a*		3.09	30-31			
Dallas		2.85	22			
Devine		3.65	4			
Duval		5.40	22			
Flower Bluff		2.57	21-22			
Fort Clark		2.64	21-22			
Fort McIntosh		3.40	30	3.40	3 00	30
Fort Ringgold		2.60	31			
Fort Worth		5.60	21-22			
Fredericksburg		2.90	28	1.41	1 02	28
Galveston	12.00	5.00	5	5.00	4 00	5
Golindo		3.55	29-30	1.75	1 30	30
Do		2.88	30-31			
Grape Vine	11.50	3.02	4			
Hallettsville	15.86	2.70	1	2.70	2 15	1
Hearne		2.90	4			
Do		5.20	29			
Do		3.38	28-29			
Houston	13.06	3.05	29			
Huntsville		3.30	30			
McGregor	11.80					
Marshall		3.00	4			
New Braunfels	11.38	3.46	4-5	1.72	1 30	5
Palestine		3.31	29	1.14	1 00	25
Do		2.55	31			
Panter				1.50	0 40	21
Rock Springs		2.79	4			
San Antonio (V. O.)		2.81	4			
San Antonio (W. B.)		4.10	4			
San Marcos *a*	10.55	4.10	4	1.26	0 45	6
San Marcos *b*		5.20	29-30			
Sulphur Springs	10.38					
Waco						
Vermont.						
Cornwall				1.00	0 50	8
Virginia.						
Birdsnest		2.50	25-26			
Cape Charles		3.10	25			
Norfolk				1.23	1 00	25
Washington.						
Madrone		2.58	25-26			

TABLE XIII.—*Excessive precipitation*—Continued.

Stations.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Washington—Continued.	*Inches.*	*Inches.*		*Ins.*	*h. m.*	
Monte Cristo	11.74	.....	.....	.....	.....	.....
Neah Bay	10.77	.....	.....	.....	.....	.....
West Virginia.						
Cloverdale	.....	.....	.....	1.48	0 30	10
Wisconsin.						
Crandon	.....	3.30	29–30	.....	.....	.....
Florence	.....	2.95	30	.....	.....	.....

TABLE XIV.—*Maximum rainfall in one hour or less, May*, 1895.

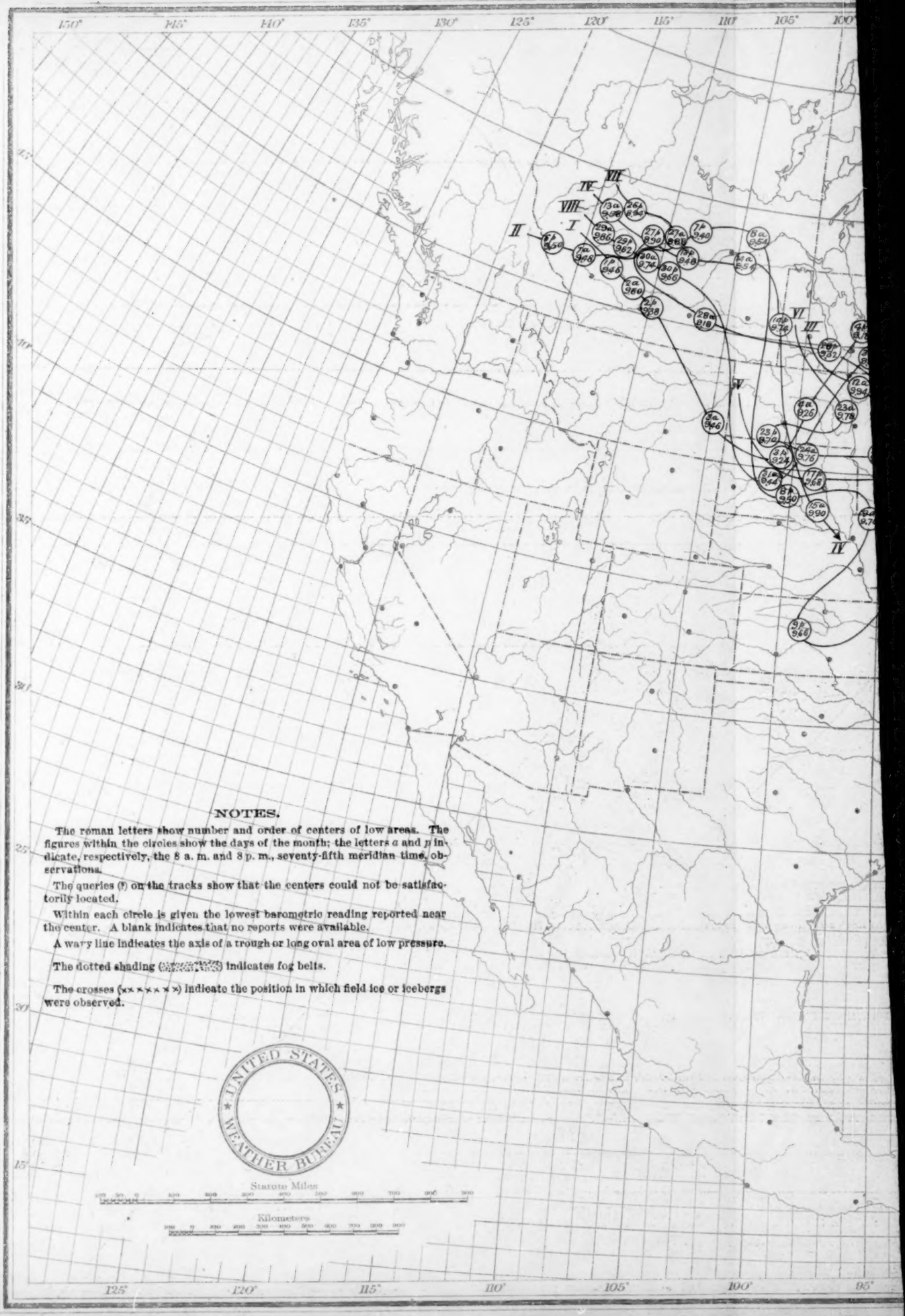
Stations.	Maximum rainfall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
	Inch.		*Inch.*		*Inch.*	
Atlanta, Ga.*	0.35	8	0.55	8	0.80	8
Baltimore, Md.	0.06	12	0.11	12	0.30	12
Bismarck, N. Dak	0.25	1	0.55	1	0.85	1
Boston, Mass.	0.15	12	0.18	12	0.52	12
Buffalo, N. Y.	0.20	7	0.28	7	0.86	7
Chicago, Ill.*	.....	.....	.....	.....	.....	.....
Cincinnati, Ohio	0.08	26	0.15	26	0.40	26
Cleveland, Ohio*	0.10	26	0.20	26	0.54	26
Denver, Colo.	0.06	16	0.07	16	0.17	16
Detroit, Mich	0.07	6	0.10	6	0.30	6
Dodge City, Kans.	0.15	30	0.17	30	0.46	30
Duluth, Minn	0.05	2	0.05	2	0.20	31

TABLE XIV.—*Maximum rainfall*—Continued.

Stations.	Maximum rainfall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
	Inch.		*Inch.*		*Inch.*	
Eastport, Me	0.10	12	0.11	12	0.14	27
Galveston, Tex.	0.25	28	0.45	28	1.41	28
Indianapolis, Ind	0.08	13	0.10	13	0.20	13
Jacksonville, Fla	0.10	26	0.15	21, 26	0.30	17, 26
Jupiter, Fla	0.30	24	0.55	24	0.72	24
Kansas City, Mo	0.25	4	0.41	4	0.53	4
Key West, Fla.	0.15	7	0.25	7	0.52	3
Little Rock, Ark.	0.20	29	0.26	29	0.45	4
Louisville, Ky.	0.20	26	0.35	26	0.40	26
Marquette, Mich.	0.22	9	0.36	9	0.47	9
Memphis, Tenn.	0.01	26	0.02	26	0.10	26
Milwaukee, Wis.*	0.16	31	0.21	31	0.60	4
Nantucket, Mass	0.20	26	0.35	26	1.08	26
Nashville, Tenn.	0.25	13	0.28	13	0.30	13
New Orleans, La.*	0.30	24	0.50	24	1.10	24
New York, N. Y	0.16	27	0.20	27	0.58	27
Norfolk, Va.	0.20	25	0.34	25	1.23	25
Omaha, Nebr.	0.09	6	0.15	6	0.35	6
Philadelphia, Pa.	0.07	26	0.09	26	0.17	27
Pittsburg, Pa.*	0.08	7	0.12	7	0.30	7
Portland, Me.	0.08	12	0.16	12	0.48	12
Portland, Oreg.	0.11	27	0.22	27	0.45	27
Rochester, N. Y	0.30	8	0.50	8	0.74	8
St. Louis, Mo.	0.10	15	0.14	15	0.40	15
St. Paul, Minn.	0.15	29	0.18	29	0.25	29
Salt Lake City, Utah*	0.03	1	0.05	1	0.15	28
San Diego, Cal.	0.01	2	0.01	2	0.07	2
San Francisco, Cal.	0.05	1	0.07	1	0.16	1
Savannah, Ga.	0.20	24	0.36	24	0.55	24
Seattle, Wash.	0.04	25	0.06	6, 25	0.15	25
Vicksburg, Miss.	0.20	1	0.33	1	0.68	1
Washington, D. C.	0.11	12	0.18	12	0.30	12
Wilmington, N. C.	0.15	11, 18	0.24	11	0.61	18

* Record incomplete.

Chart I. Tracks o



NOTES.

The roman letters show number and order of centers of low areas. The figures within the circles show the days of the month; the letters *a* and *p* indicate, respectively, the 8 a. m. and 8 p. m., seventy-fifth meridian time, observations.

The queries (?) on the tracks show that the centers could not be satisfactorily located.

Within each circle is given the lowest barometric reading reported near the center. A blank indicates that no reports were available.

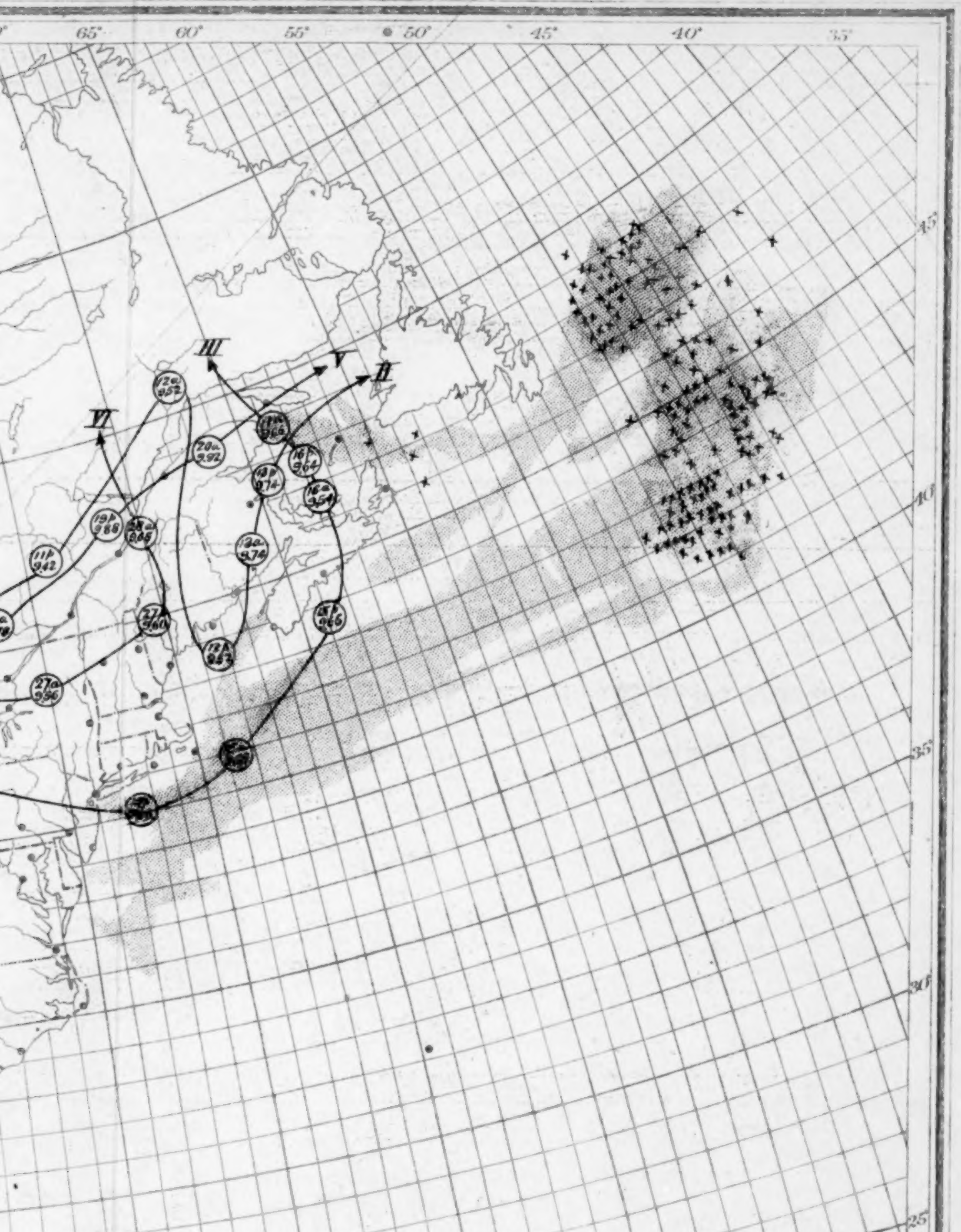
A wavy line indicates the axis of a trough or long oval area of low pressure.

The dotted shading (▒▒▒▒▒) indicates fog belts.

The crosses (× × × × × ×) indicate the position in which field ice or icebergs were observed.

UNITED STATES WEATHER BUREAU

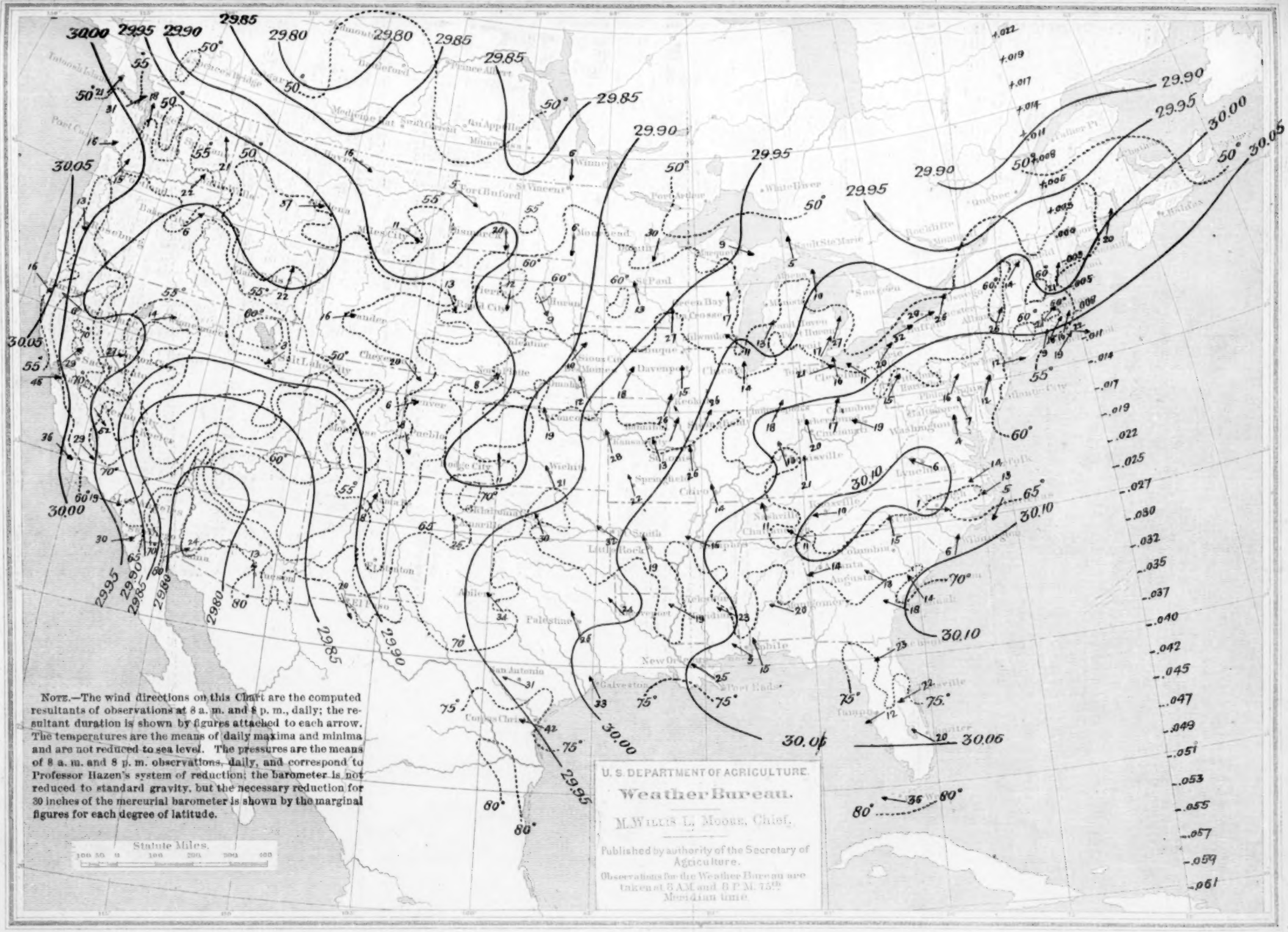
Chart I. Tracks of Centers of Low Areas. May, 1895.



65°
60°
55°
50°
45°
40°
35°
45°
40°
35°
30°
25°
20°
15°
III
V
II
VI
80°
75°
70°
65°
60°

Chart II. Isobars, Isotherms, and Resultant Winds. May, 1905.

Chart II. Isobars, Isotherms, and Resultant Winds. May, 1895.



NOTE.—The wind directions on this Chart are the computed resultants of observations at 8 a. m. and 8 p. m., daily; the resultant duration is shown by figures attached to each arrow. The temperatures are the means of daily maxima and minima and are not reduced to sea level. The pressures are the means of 8 a. m. and 8 p. m. observations, daily, and correspond to Professor Hazen's system of reduction; the barometer is not reduced to standard gravity, but the necessary reduction for 30 inches of the mercurial barometer is shown by the marginal figures for each degree of latitude.

U. S. DEPARTMENT OF AGRICULTURE.
Weather Bureau.
M. WILLIS L. MOORE, Chief.
Published by authority of the Secretary of Agriculture.
Observations for the Weather Bureau are taken at 8 A.M. and 8 P.M. 75th Meridian time.

Chart III. Total Precipitation, May, 1895.

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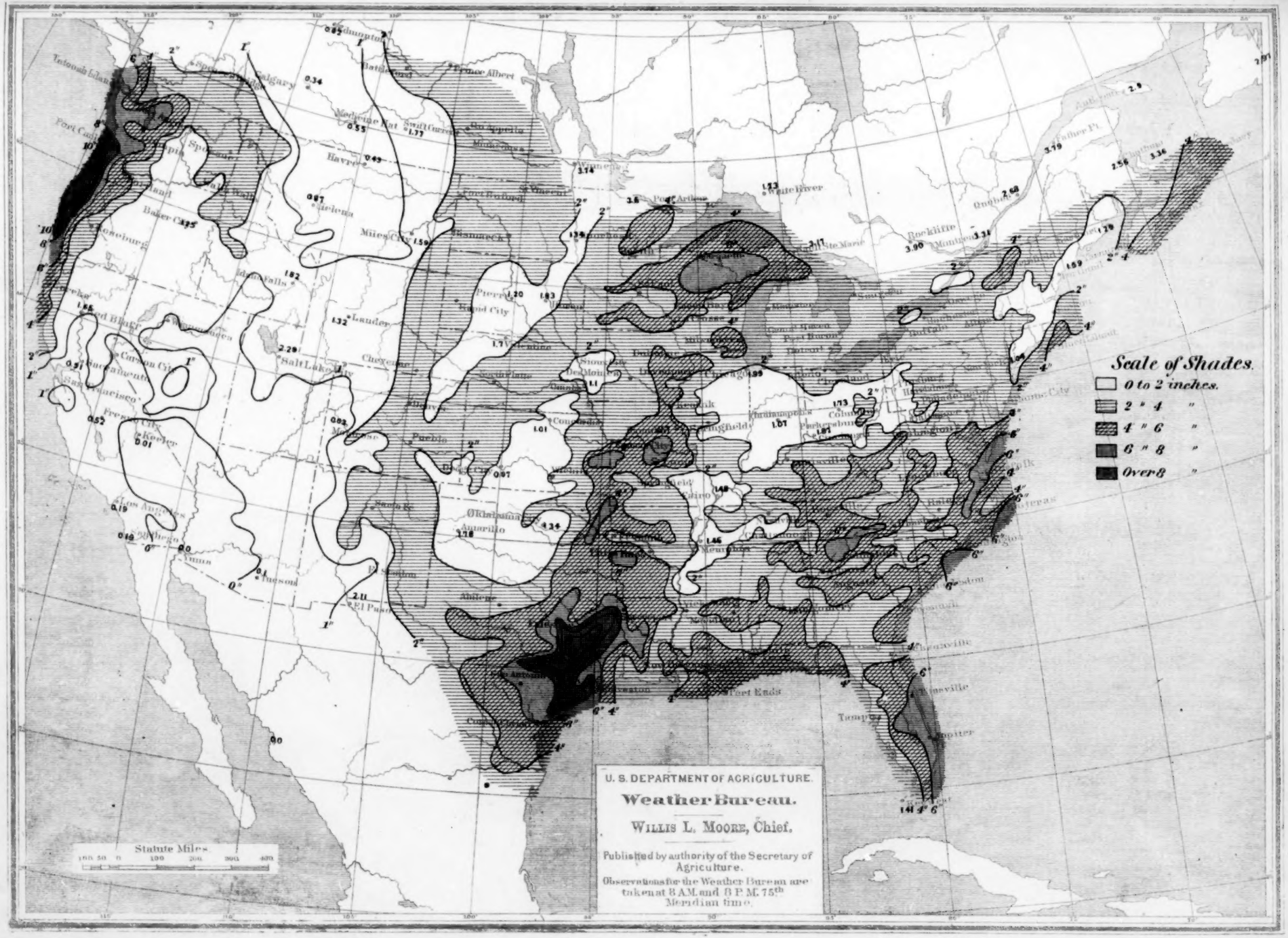


Chart IV. Tracks of Centers of High Areas. May, 1895.

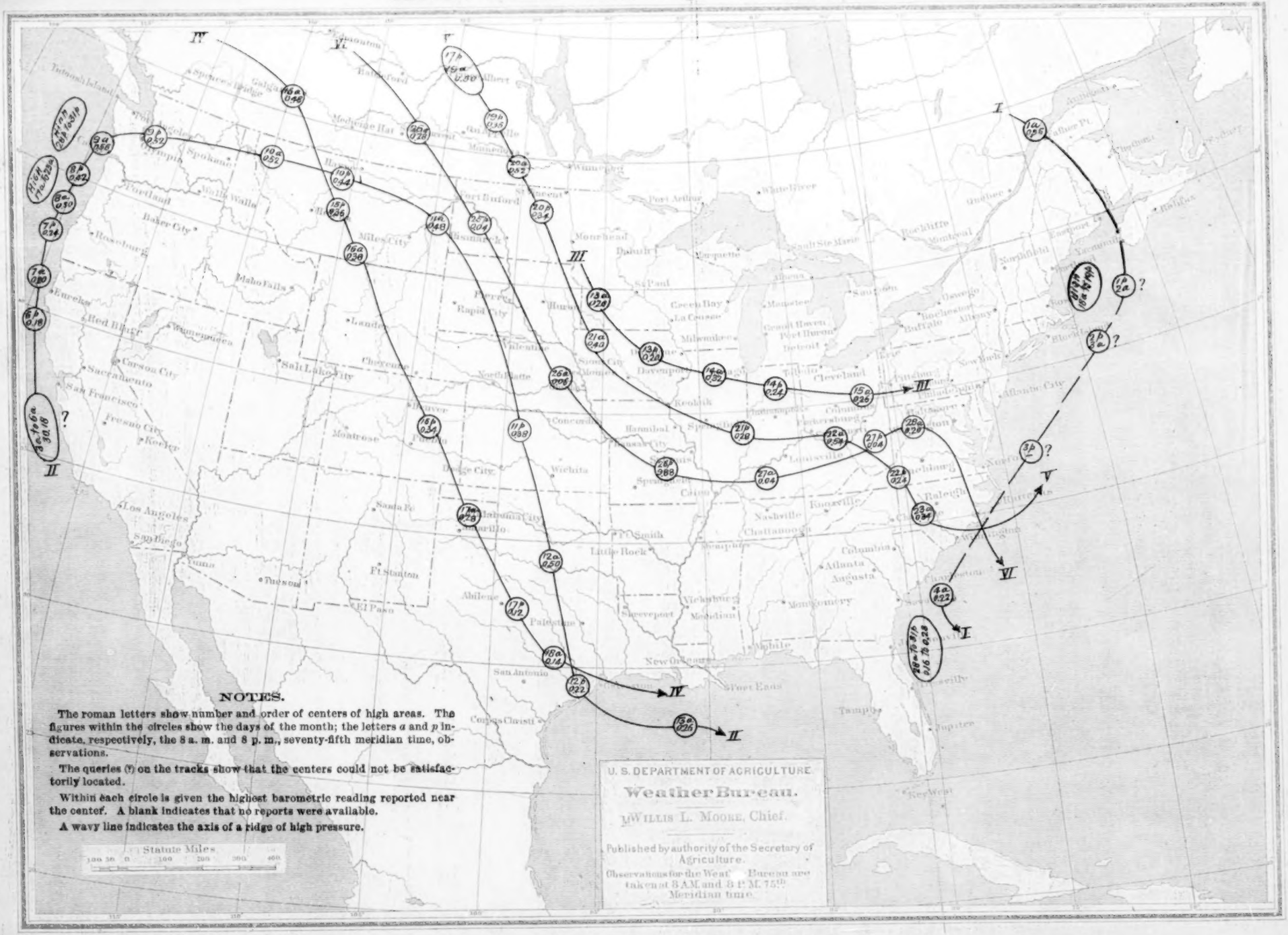
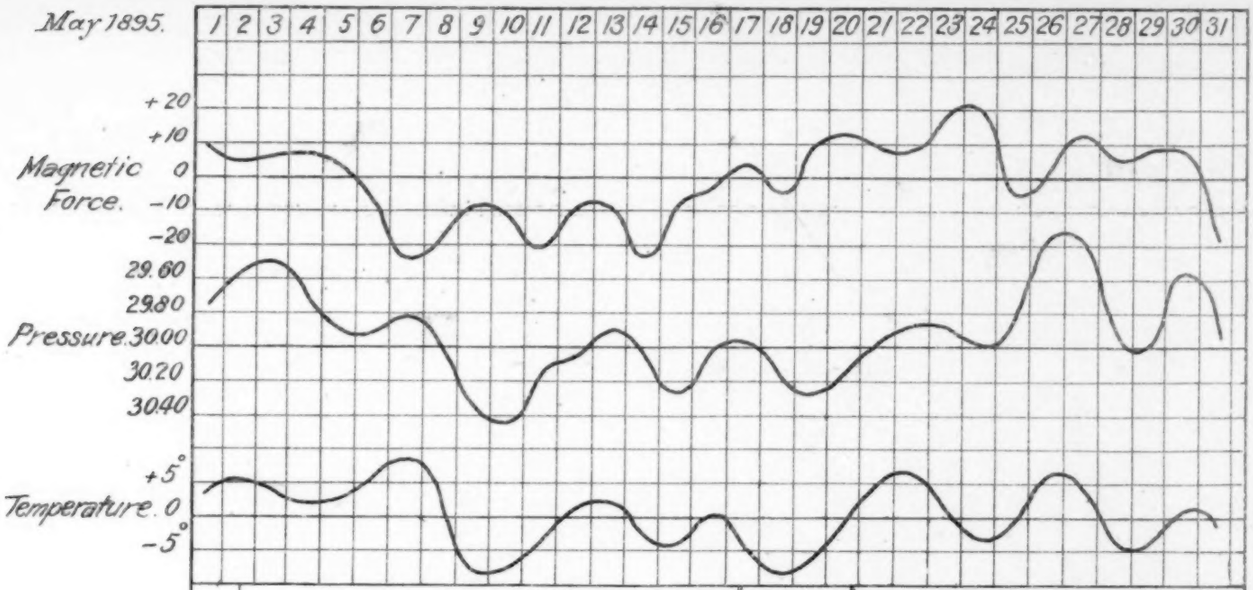


Chart V. Relative Variations of the Horizontal Magnetic Force and the Northwest Pressures and Temperatures.



May 1895.	North-West Temperatures.								Pressure	Horizontal Magnetic Force.				
	Calgary.	Salt Lake City.	Williston.	Variations.			Means + 2.		10 North West Stations.	Toronto	Washington.	Variations.		Means + 17.
				Calgary.	S.L. City.	Williston.						Toronto	Washington	
1	58	51	62	+6	-2	+2	+4		29.73	438.4	56.9	-5	-8	+10
2	56	55	63	+4	+2	+3	+5		.58	438.6	56.0	-3	-17	+7
3	55	52	63	+3	-1	+3	+4		.54	438.2	56.4	-7	-13	+7
4	55	53	60	+3	0	0	+3		.77	437.8	56.9	-11	-8	+8
5	55	56	58	+3	+3	-2	+3		.85	437.7	56.1	-12	-16	+3
6	53	57	65	+1	+4	+5	+5		.91	436.9	54.9	-20	-28	-7
7	56	63	68	+4	+10	+8	+9		.82	435.6	52.7	-33	-50	-24
8	51	60	56	-1	+7	-4	+3		30.01	436.4	53.7	-25	-40	-16
9	42	45	47	-10	-8	-13	-8		.37	437.3	54.4	-16	-33	-8
10	44	45	48	-8	-8	-12	-7		.41	435.7	54.9	-32	-28	-13
11	47	50	53	-5	-3	-7	-3		.10	435.7	53.5	-32	-42	-20
12	51	57	51	-1	+4	-9	0		.06	437.2	54.7	-17	-30	-7
13	52	61	54	0	+8	-6	+3		29.91	437.5	54.1	-14	-36	-8
14	45	59	48	-7	+6	-12	-2		30.05	435.7	53.0	-32	-47	-23
15	48	50	50	-4	-3	-10	-4		.28	436.9	54.8	-20	-29	-7
16	53	53	53	+1	0	-7	0		.00	437.0	55.5	-19	-22	-3
17	47	58	42	-5	+5	-18	-4		29.99	438.4	55.8	-5	-19	+5
18	41	53	42	-11	0	-18	-8		30.15	437.8	54.3	-11	-34	-5
19	44	53	46	-8	0	-14	-5		.24	438.8	56.4	-1	-13	+10
20	50	53	53	-2	0	-7	-1		.16	438.8	57.0	-1	-7	+13
21	56	57	60	+4	+4	0	+5		29.97	438.4	56.6	-5	-11	+9
22	56	56	65	+4	+3	+5	+6		.87	438.7	56.1	-2	-16	+8
23	52	55	56	+0	+2	-4	+1		.88	439.5	57.7	+6	0	+20
24	48	52	51	-4	-1	-9	-3		.99	439.7	57.4	+8	-3	+20
25	50	53	54	-2	0	-6	-1		.81	438.4	55.9	-5	-18	-5
26	54	60	67	+2	+7	+7	+7		.33	437.2	56.1	-17	-16	0
27	54	54	63	+2	+1	+3	+4		.39	438.4	57.4	-5	-3	+13
28	44	46	56	-8	-7	-4	-4		.98	437.8	56.4	-11	-13	+5
29	46	48	54	-6	-5	-6	-4		30.04	440.4	54.4	+15	-33	+8
30	52	53	57	0	0	-3	+1		29.55	439.5	55.4	+6	-23	+9
31	49	48	58	-3	-5	-2	-1		.93	437.0	52.5	-19	-52	-18

Chart VI. Depth of Snowfall and Limits of Freezing Weather, May, 1895.

Chart VI. Depth of Snowfall and Limits of Freezing Weather. May, 1895.

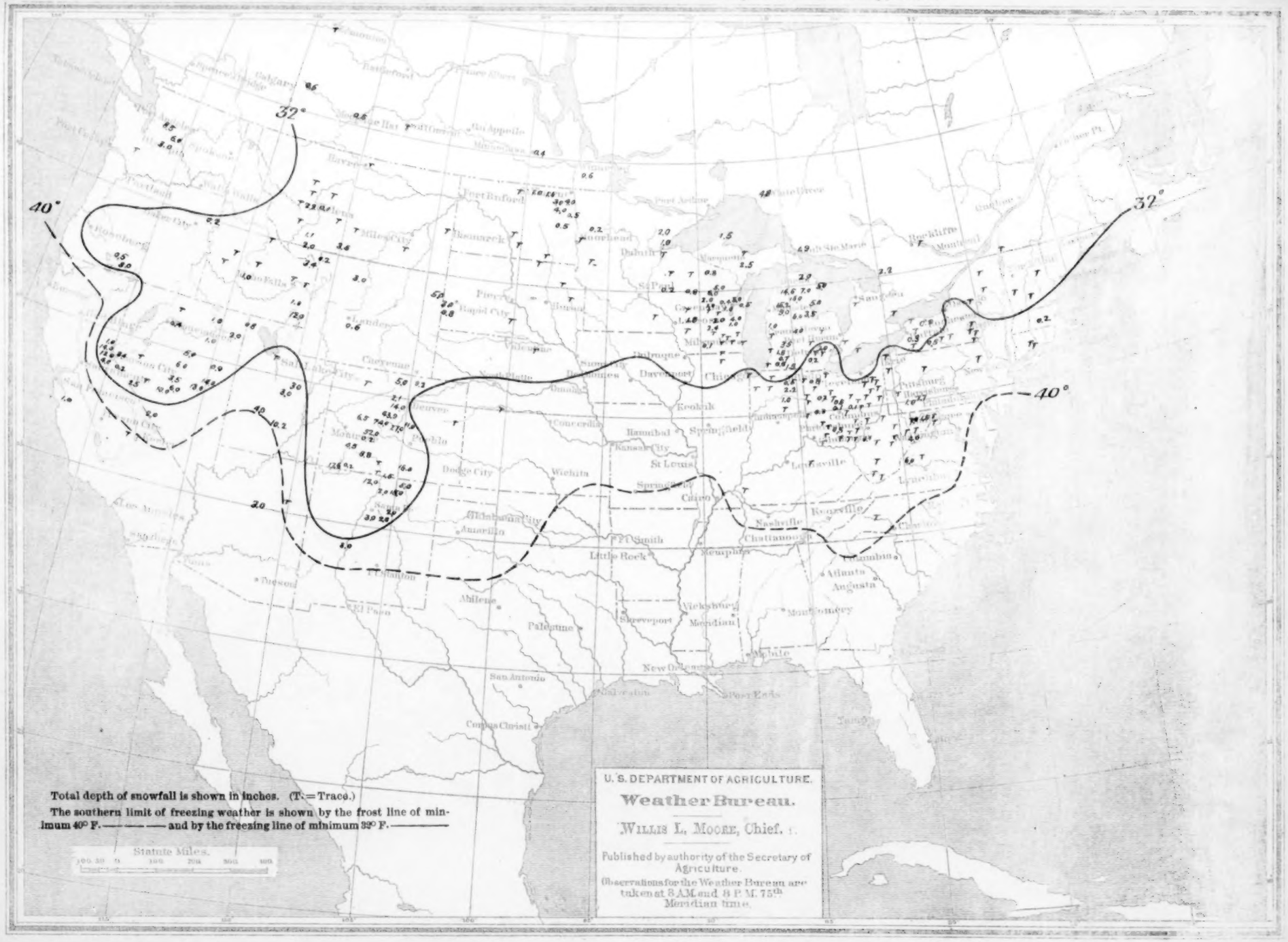
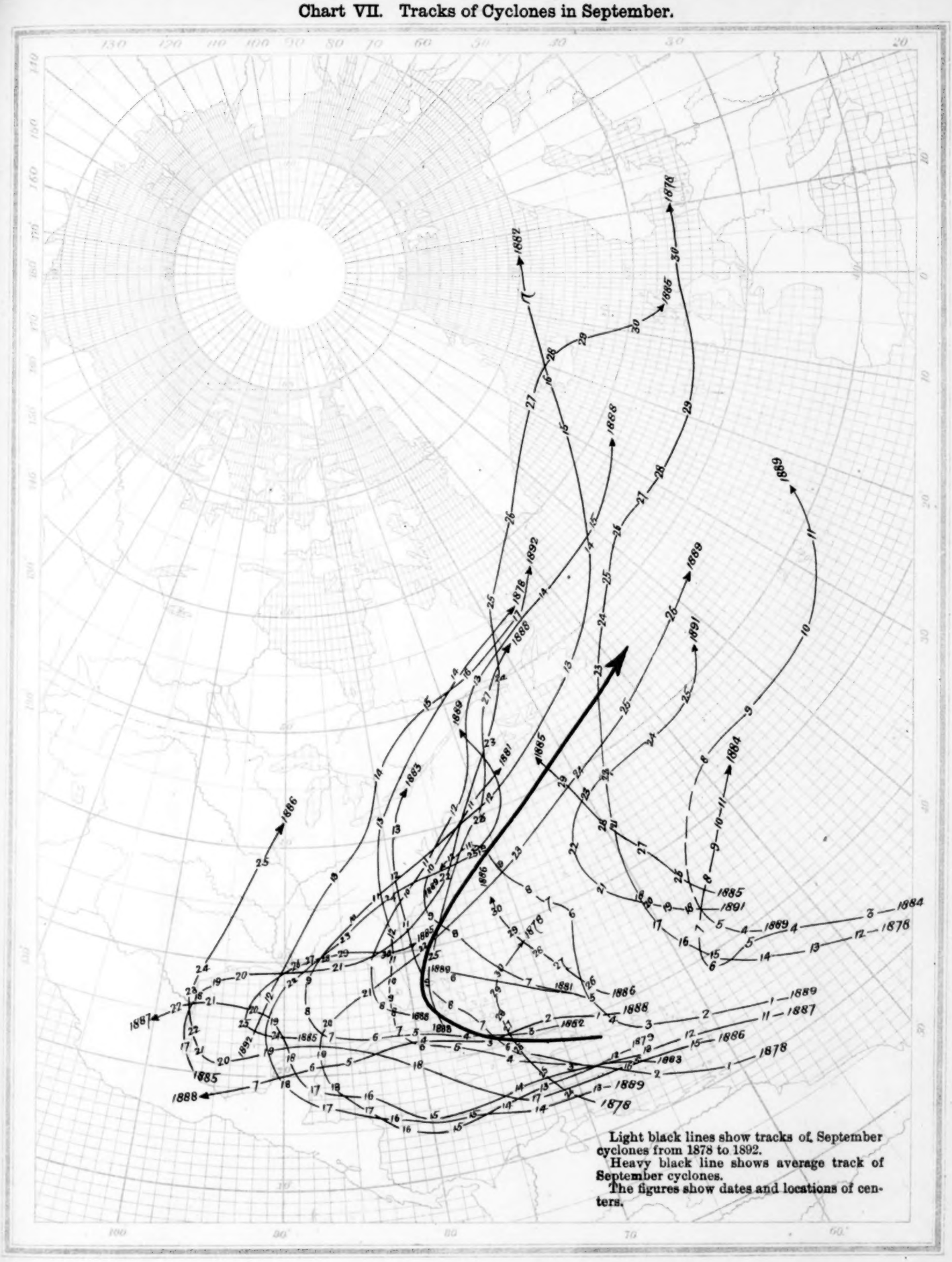


Chart VII. Tracks of Cyclones in September.



Light black lines show tracks of September cyclones from 1878 to 1892.

Heavy black line shows average track of September cyclones.

The figures show dates and locations of centers.

Chart VIII. The Tornadoes of May 3, 1895.